NATIONAL WASTE MANAGEMENT PROGRAMME

CONTENTS

ABBREVIATIONS

BAPE	Bulgarian Association of Packing and Environment
BAT	Best Available Technologies
BATNEEC	Best Available Technology Not Involving Excessive Costs
BCCI	Bulgarian Chamber of Commerce and Industry
BDS	Bulgarian National Standard
BIA	Bulgarian Industrial Association
BIS	Bulgarian Institute for Standardization
CEAP	Community Environment Action Programme
DB	Data Base
EAMA	Executive Agency "Maritime Administration"
EAPA	Executive Agency "Port Administration"
EC	European Commission
EEA	Executive Environmental Agency
EHWL	European Hazardous Waste List
EIA	Environmental Impact Assessment
ELV	End-of-life vehicles
ELVRO	End-of-Life Vehicles Recovery Organization
EMEPA	Enterprise for Management of Environmental Protection Activities
EPA	Environmental Protection Act
EU	European Union
EWC	European Waste Catalogue
GDP	Gross Domestic Product
HDPE	High Density Polyethylene
HEI	Hygienic-Epidemiological Inspections
IEC	Inter-institutional Expert Council
IPPC	Integrated Prevention and Pollution Control
LAA	Laboratory and Analytical Activities
LDPE	Low Density Polyethylene
LPWC	Landfills and past waste contaminations
MAF	Ministry of Agriculture and Forestry
ME	Ministry of Economy
MEER	Ministry of Energetic and Energy Resources
MES	Ministry of Education and Science

MF	Ministry of Finance
MH	Ministry of Healthcare
MLSP	Ministry of Labour and Social Policy
MOEW	Ministry of Environment and Water
MRDPW	Ministry of Regional Development and Public Works
MTC	Ministry of Transport and Communications
NAMRB	National Association of Municipalities in Republic of Bulgaria
NCHMEN	National Centre of Hygiene, Medical Ecology and Nutrition
NEPF	National Environmental Protection Fund
NGO	Non-Government Organization
NIMBY	Not in my back yard
NSEM	National System for Environmental Monitoring
NSI	National Statistical Institute
NWMP	National Waste Management Programme
PA	Privatization Agency
PET	Polyethylene terphthalate
PP	Polypropylene
PPA	Public Procurement Act
PS	Polystyrene
PVC	Polyvinyl Chloride
RHIWEA	Reduction Of The Harmful Impact Of Waste Upon The Environment Act
RIEW	Regional Inspectorate of Environment and Water
RLPWC	Register of landfills and past waste contaminations
RO	Recovery Organization
SA	State Agency
SAMTS	State Agency for Metrology and Technical Surveillance
SB	State Budget
TEPP	Thermo-electric power plant
UN	United Nations
VAT	Value Added Tax
WMA	Waste Management Act
WWTP	Waste Water Treatment Plant
EMAS	Eco-Management and Audit Schemes
PCB	Polychlorinated byphenyls
PCT	Polychlorinated terphenyls

INTRODUCTION

The National Waste Management Programme is developed on the basis of the requirements of Article 77 of the Environmental Protection Act (EPA) and Article 28 of the Waste Management Act (WMA). Its main purpose is to contribute to the sustainable development of the Republic of Bulgaria by integrated framework which will lead to reduction of the harmful impact upon the environment caused by the waste generation, to improvement of the effectiveness of the natural resources consumption, to increase of the producer responsibilities, and to encouraging of the investments in waste management.

The programme is developed in accordance with the requirements of Directive 75/442/EEC on waste, Directive 91/689/EEC on hazardous waste, and the Strategy on Waste Management of the European Union. The objectives and the priorities that are directed to all waste management fields should ensure the implementation of an integrated and effective waste management system at all levels.

The analysis of the existing situation in the waste management sector and the identification of the problems were the basis for the determination of the objectives of the Programme and the measures in the Action plan related to these objectives. In the Action plan, for each of the activities, it is specified the responsible institutions and the necessary financial resources for the implementation of the Programme for the period of 2003-2007.

CHAPTER I: ACHEIVEMENTS BY THE IMPLEMENTATION OF THE EXISTING NATIONAL WASTE MANAGEMENT PROGRAMME (1999 – 2002)

By the implementation of the National Waste Management Programme, (adopted by Decision № 254 of the Council of Ministers from 20th of April 1999) appropriate conditions were set for solving the pressing tasks related to the environmentally sound waste management. During the period of validity of the Programme serious results were achieved in the implementation of the measures envisaged in the Action plan of the Programme. The main results are presented according to the eight priority directions of the Programme.

1. PREVENTION AND REDUCTION OF THE WASTE GENERATION

Obligations for restriction of the use of cutlery and utensils for single use in the restaurants and places of resort have been introduced. By the entry into force of the Tourism Act (promulgated in State Gazette No 56 from 2002) and its secondary legislation, the specific requirements for the utensils used in the different categories of restaurants and places of resort have been laid down.

In 2001 together with American Agency for International Development, programme for training of 100 municipalities by workshops on a topic "Methodology for determination of municipal waste fee on the basis of real costs by activities" was initiated and realized. In the framework of this programme, *Manual for evaluation of the costs and planning of the incomes for waste collection and treatment* was developed and disseminated. It is destined for the municipal officials (mayors, environmentalists, head of departments) and companies that carry out waste collection and transportation. The manual provides information about the possibilities for determination of municipal waste fee taking into account the full costs for waste collection and treatment and cleaning of the streets as well as rendering of services to the citizens and the companies in the municipality.

By the financial support from EMEPA (former NEPF), pilot project for household composting in the municipality of Velingrad was realized, which is one of the methods for reduction of the quantity biodegradable waste. For the implementation of the project, separate collection of organic waste from the municipal waste flow with purpose of composting have been introduced and 120 containers for household composting were supplied. The total value of the project is 41 690 levs.

2. REUSE AND RECYCLING

Batteries and accumulators

Prohibition on discharge of acid from accumulators and obligation to the companies to bye up the accumulators with acid have been introduced by the adoption of the *Regulation on the requirements for production and placing on the market of batteries and accumulators and for treatment and transportation of waste batteries and accumulators* (adopted by the Council of Ministers Decree №134 / 2000).

Project for System for collection, storage, transportation and treatment of waste accumulators (total amount of 256 629$) has been realized according to a contract between the National Environmental Protection Fund (NEPF) and "OZK" Ltd. – town of Kurdjaly for granting an interest-free credit. A detail study for project for reconstruction and modernization of the installation for recycling of accumulators in "OZK" Ltd. is under development.

End-of-life vehicles

Till the end of 2002, 130 permits were issued to companies for carrying out of activities with this kind of waste on the territory of the country. The system is financially secured by the charge in amount of 80 levs, which is paid by the importers, producers and other economic operators at the time of selling of the cars. The funds are charged to an account of EMEPA.

Glass recycling

Project for installation for separation, grinding and purification of glass has been realized in the village of Kitchevo, municipality of Varna by the company "Markonsim" Ltd. The constructed installation is with capacity of 32 tons per day. Conditions for delivery of glass purified from admixtures for recovery to the plants of "Belopal"-Beloslav, "Stind"-Sofia and "Drujba"-Plovdiv has been provided.

Recycling of used tyres

A contract for granting of interest-free credit for "Establishment of system for collection, treatment and recovery of used tyres" on a total amount of 95040 tons for a period of five years since 2003 has been concluded. The system covers the whole territory of Bulgaria and it is envisaged that sites with flow lines for grinding of automobile tyres will be constructed.

Recovery of plant and wood waste

For the period 1999 – 2002 projects for recovery of wood waste and production of briquettes have been realized – by company "Nika" – town of Smolyan by means of credit granted by NEPF to the amount of 40 000 levs and for construction of flow line for production of briquettes from wood waste; to "Toplivo" Ltd. – town of Smolyan by means of credit granted by NEPF to the amount of 1 581 842 levs; "Eleya-98" Ltd. town of Pernik by means of credit granted by NEPF to the amount of 300 000 levs and "Furnir" Ltd. Sofia by means of credit granted by NEPF to the amount of 200 000 levs.

Recycling of plastics

For the period 1999 – 2002 the NEPF granted loans for introduction of systems for separate collection and improvement of the infrastructure for recycling of plastic packaging:

to company "Metarex" – Shumen to the amount of 918 530 levs for introduction of system for collection and construction of installation for recovery of PET bottles for the north eastern part of Bulgaria;

to company "Sofiaplast" Ltd. – Sofia to the amount of 4 824,85 levs for buying of materials for a pilot project;

to company "Fenix-Plastic" – town of Targoviste to the amount of 410 000 levs for reconstruction of production line for recycling of plastic waste;

to "Himik" – town of Asenovgrad to the amount of 700 000 levs for reconstruction and modernization of production line for recovery of plastics.

An annual capacity of 7000 tons polyethylene and 11 000 tons polypropylene waste has been ensured by the last two projects.

Recycling of construction waste

Since the year 2000 the realization of practical projects for recovery of construction waste and waste which after treatment may be used as construction materials was undertaken. The MOEW has supported the realization of a project between the Czech company REC-Bulgaria and the municipal company "SOFINVEST" for recovery of construction waste. A project for utilization and treatment of phosphate gypsum and fahleite waste, by which construction bricks are produced, have been funded.

Separate collection and recycling of paper from the budgetary institutions

In 2001 containers for separate collection of paper in 4 institutions – MOEW, Ministry of Education and Science, Ministry of Health and Ministry of Agriculture and Forestry have been placed and 8 new ministries will be included till the end of 2003. The financial resources are provided by the EMEPA.

3. IMPROVEMENT OF THE ORGANIZATION OF COLLECTION AND TRANSPORTATION

During the period 1999-2002 projects for supply of containers and equipment for collection and transportation of waste in the municipalities of Madan, Zlatograd, Vratza, Gorna Oryahovitza, Silistra, Strajitza, Sevlievo, Shumen, Pernik, Dryanovo, Karlovo, Montana, Targoviste, Svistov, Velingrad, Sredetz, Valchedrum and some private companies have been financed by means of loans by the EMEPA to the total amount of 9 586 288 levs.

4. ENVIRONMENTALLY SOUND DISPOSAL OF WASTE

For the period 1999 – 2002 the construction of regional landfills for disposal of municipal waste for Sofia municipality, for the municipalities of Plovdiv – Rodopy – Stamboliiski, municipality of Rudozem, municipality of Khaskovo – Mineralny bani, municipality of Madan, municipalities of Sandanski – Strumyani, municipalities of Troyan – Apriltzi, municipality of Ruse, municipality of Sevlievo, municipality of Kharmanly, municipality of Vratza – Mezdra, municipalities of Gorna Malina – Elin Pelin, municipality of Karlovo, municipality Shumen and municipalities of Aksakovo - Varna were supported by funds from EMEPA and the State Budget (SB) to total amount of 66 045 236,95 levs. The landfill of municipalities of Vratza and Mezdra was constructed by financial support in amount of 7 386 787 Danish corns by the Kingdom of Denmark. The funds have been used for construction of the first and the second landfill cell and for supply of equipment and installations. The MOEW continued to allot financial resources for design of landfills by financing through the NEPF of the design of a landfill for municipal waste for Sandansky (Strumyani) – 1 745 811 levs, partial financing of the design of the landfill at Ruse (Slivo pole) – 70 000 levs, design of the reconstruction of a landfill for hazardous waste Smyadovo – 120 291 levs and design of landfill for municipal waste Dospat – 12 000 levs. The designs for construction of regional landfills for municipal waste for the regions of Pernik, Silistra, Sozopol and Montana were developed.

A project for construction of 6 regional landfills for disposal of municipal waste was approved by the European Commission waste to total amount of 60 millions EURO and 75 % of the funds are provided through the pre-accession funds of EU – programme ISPA. The construction of the regional landfills at the municipality of Ruse (together with the municipalities of Vetovo, Ivanovo, Slivo pole, Tzar Kaloyan, Tutrakan), the municipality of Montana (together with the municipalities of Krivodol, Boychinovtzi, Berkovitza, Lom, Chiprovtzi, Georgi Damianovo, Brusartzi, Medkovetz, Varshetz, Yakimovo), the municipality of Sevlievo (together with municipalities of Suhindol and Dryanovo), the municipality of Pernik (together with municipalities of Zemen, Trun, Kovachevtzi, Breznik, Radomir), municipality of Silistra (together with municipalities of Kaynardja, Sitovo, Dulovo, Alfatar, Glavnitza) and the municipality of Sozopol (together with municipalities of Primorsko and Tzarevo) has started in 2003.

A study has been carried out for construction of regional landfills for disposal of municipal waste for the period after 2002 by taking into account the existing landfills or the landfills in process of construction by 2002. The results of the study were used as a basis for drawing up of the investment plan of the present programme.

The work on the project BG 9810-02-01 (003) – "Feasibility study and preparation of documents for construction of National centre for treatment of hazardous waste" continues. In the framework of the project, an assessment of the quantity and characteristics of the hazardous waste generated in the country was carried out. Based on this initial information the most suitable disposal technologies were selected and a blueprint of the necessary facilities and installations was drawn up. Consultations with the European Commission were held about the possibilities for funding of the project. For the construction of the centre, phasic approach and decentralization of the facilities for landfilling of hazardous waste will be applied.

Preparatory and organizational activities for construction of landfills for hazardous waste were carried out. The construction of the landfills in Sevlievo and Ruse, where cells for hazardous waste will be constructed, started in 2003 (by funding through programme ISPA).

National plan for disposal of hospital waste was drawn up through programme "REAP" of EU. In this plan, the number of the necessary facilities for treatment of hospital waste and their location on the territory of the country is specified and priority measures and objectives are laid down. Short, middle and long term measures for gradual construction of facilities for disposal of the hospital waste on the territory of the country are envisaged.

Through the financial support of the Danish Environmental Protection Agency and EMEPA, an incinerator for hospital waste on the territory of Medical Academy in Sofia was constructed. The capacity of the incinerator is 2800 tons per year and it is intended for disposal of the hospital waste from the territory of Sofia municipality. This is the first facility on the territory of the country that is constructed in compliance with all European requirements. The project consists of three main components – pilot project in the University Hospital "Tzaritza Yoana" for setting up of a model for separate collection of hospital waste, construction of installation for incineration of infectious and pathological hospital waste, and implementation of a system for separate collection of the waste in all medical establishments on the territory of Sofia.

Through programme "REAP" of EU National plan for treatment of sludge from Waste Water Treatment Plants (WWTP) together with guideline for treatment of sludge from WWTP were drawn up. The objectives of the National plan are related to the application of methods for recovery of WWTP sludge that are in compliance with the standards laid down in the legislation and to establishment of appropriate infrastructure of sludge treatment facilities in compliance with the requirements of Directive 75/442/EEC on waste. In practical aspect, project for utilization of sludge from WWTP – Plovdiv for land restoration of the tailing pond "Elshitza" is being realized.

Plants from the cement industry consider the possibilities for reconstruction and equipment of the existing installation in order to co-incinerate different types of waste as additional fuel during the production processes. After the necessary reconstruction of the existing installation it will be possible the following waste to be incinerated: automobile tyres; municipal waste; waste water treatment plant sludge after pre-treatment; plastics; waste paper; wood waste; waste oils and other waste with the necessary caloricity. The broadest interest is for incineration of used automobile tyres because of their constant composition and high caloricity.

5. LIMITATION OF THE RISK FROM PAST WASTE CONTAMINATIONS

During the period July 1999 – July 2001, project "National programme for limitation of the number and the risk of the landfills and past waste contaminations" was realized through the financial support by the government of the Federal Republic of Germany and co-financing by NEPF. Within the framework of the project, 59 municipal landfills that serve population above 20 thousand inhabitants were inventoried and assessed. These landfills serve above 70 % of the population of the country and their assessment gives an idea for the state of the landfills and municipal waste in Bulgaria. The realization of the project has contributed to:

- establishment of a system for registration and cadastring of the landfills and the past waste contaminations (LPWC);
- introduction of software application (program GEFA) for assessment of the risk for the ground water and soil by the LPWC and their prioritization by risk degree;
- creation of register of the assessed municipal waste that supplements the existing register in EEA;
- inventory, assessment and categorization of the landfills by risk degree as well as proposing of measures for limitation of the risk;
- assessment of the costs necessary for implementation of the measures proposed by using the experience of the Saxon practice for assessment and treatment of past contaminations;
- development of methodological instructions for assessment of LPWC and instructions for usage of portable gas-analyzer;
- proposal of a Program for own monitoring of the landfill Suhodol;
- issuance of a brochure for informing of the public for the problems of the past waste contaminations.

Contracts were concluded for financing of 61 municipalities for elimination of past contaminations by obsolete pesticides and preparations for plant protection to total amount of 819 446 levs.

The following projects were realized during the period 1999 – 2002 for elimination of contaminations caused in the past before the privatization of the industrial enterprises:

1. Pilot project of World Bank for improvement of the environment in the region of MDK Ltd. – Pirdop. By the end of 2002 the following is accomplished under the project: demolition of the plant for sulphuric acid, landfilling of the solid waste and the polluted soil, encapsulation of the tailing pond known as the "Blue lagoon" and reclamation of the area; landfill for waste was constructed. Accomplishment of the realization of the last activity of the project – closure of the site for fahleite.

2. Project of World Bank for support of the environmental protection and the privatization:

An Inter-institutional Expert Council (IEC) was established in the MOEW for implementation of the programmes for elimination of past contaminations of the environment by Order 78/28.02.2000 of the Minister of Environment and Water;

The implementation of the activities of the Agreements for implementation of the Programme for elimination of contaminations to the environment caused by past activities or lack of activities before the privatization of eleven enterprises: "Asarel – Medet" Ltd. – Panagyuriste; "Kremikovtzi" Ltd. – Sofia and "Neftohim" Ltd. – Burgas; "Sofarma" Ltd. – Sofia, "Neohim" Ltd. – Dimitrovgrad, "Agropolihim" Ltd. – Devnya, "Geosol" Ltd. – Provadia, "Biovet" Ltd. – Pestera, "Pirel" Ltd. – Gotze Delchev continues;

Implementation of the activities for elimination of past contaminations of the environment:

- "Asarel - Medet" Ltd. – Panagyuriste – 4 feasibility studies were adopted by IEC in MOEW for: drainage water treatment plant, cleaning of the bed of river Maresh, land restoration of the first stage of the oxide pond; cleaning of the bed of the river Lyulyakovitza;

- "Kremikovtzi" Ltd. – Sofia – detailed design for melioration of acid soils in 6 km zone was adopted by IEC in MOEW ;

- "Neftohim" Ltd. – Burgas – contracts for design are concluded; the documentation for the first oxide pond presented by "Lukoil Neftohim Burgas" Ltd. is examined; a variant for technical solution was presented and on this basis additional variant to the conceptual design is presented;

- "Sofarma" Ltd. – Sofia – contracts for performance were concluded; tender procedures for selection of supervisor are carried out in accordance with the Public Procurements Act;

- "Neohim" Ltd. – Dimitrovgrad – conceptual designs for the activities in the programme was revised and approved by IEC; detailed designs for all projects of the programme were approved and technical project for supply of soil masses and land restoration was examined; rehabilitation of the landfill for phosphate gypsum is in progress;

- "Agropolihim" Ltd. – Devnya – construction and erection works at two sites of the programme are carried out: new landfill for waste and rehabilitation of the landfill for phosphate gypsum. Detailed design for organization and realization of the construction, through replacement of the detonation method by mechanical method for demolition of the site for sulphuric acid, was adopted.

3. Implementation of the Regulation on the conditions and the order for the responsibility of the state for environmental contaminations caused by past activities or lack of activities before the privatization:

Agreements for the implementation of the Programme for elimination of environmental contaminations caused by past activities or lack of activities before the privatization were signed for "Gorubso Lucky" Ltd. – town of Lucky and "OZK" Ltd. – Kurdjali ;

Implementation of activities for elimination of past environmental contaminations:

- "KCM" Ltd. – Plovdiv – detailed design for monitoring of sites 2 and 3 is adopted; detailed design for the technical rehabilitation of site 2 is adopted; permission for prospecting of the site is issued to the company "Stefan Kunev";

- "Geosol" Ltd. – Provadia – conceptual and detailed design for instalment of pump drilling near the river is adopted; decontamination of the groundwater, the implementation of the measure past contaminations with light non-water fractions has been stopped (LNAPL);

- "Pirel" Ltd. – Gotze Delchev – conceptual designs for all activities in the programme are

adopted by IEC;

- "Biovet" Ltd. – Pestera – the conceptual design for the landfill for mycelium is brought back for revision;

- "Osogovo" Ltd. – Kyustendil – the conceptual and the detailed design for land restoration of the tailing pond "Gyueshevo 2 and 3" were adopted and the detailed designs for pits "Ruen" and "Lebnitza" are approved;

- "OZK" Ltd. – Kurdjaly – revised schedule for implementation of the programme activities and all technical terms of references are adopted; contracts for designer for the projects in the programme were signed;

- "Gorubso – Lucky" Ltd. – Lucky – revised schedule for implementation of all activities and all technical terms of references for design were adopted.

Projects for conservation and rehabilitation of all tailing ponds except "Medet" were developed. The realization of the project runs as follows:

- "Elshitza" – total area 1050 decares; technical and biological land restoration was carried out; the detailed design "Hydrotechnical facilities and control and measurement devices" is accomplished and the development of a project for decontamination of the drainage waters is forthcoming;
- "Lyutadjic" – total area 124 decares; the land restoration is accomplished including the 3 year period of pouring, earthing up and re-transplanting of plants that were not grown up;
- "Gyueshevo 2 and 3" – total area 120 decares; land restoration is not carried out; detailed design is developed and its implementation is forthcoming;
- "Ustrem 4" – total area 110 decares; the technical and the biological land restoration is accomplished and the second year of the 3 year period for pouring, earthing up and re-transplanting of plants that were not grown up is ongoing;
- "Rosen 2" – total area 175 decares; the technical and the biological land restoration is accomplished and the second year of the 3 year period for pouring, earthing up and re-transplanting of plants that were not grown up is ongoing;
- "Medet" – total area 2700 decares; commercial rights are registered by the company "MBS" Ltd. – Sofia, which has the right to apply for concession and it will take care for performance of the land restoration after the accomplishment of its activities;
- "Golyam Bukovetz" – total area 155 decares; detailed design is drawn up; the technical rehabilitation is under implementation.

6. LEGAL REGULATION OF THE WASTE MANAGEMENT

- Regulation on the requirement for treatment and transportation of industrial and hazardous waste was adopted by Council of Ministers Decree No 53 dated 19.03.1999.
- Regulation on requirements for treatment of waste oils and oil products was adopted by Council of Ministers Decree No131 dated 13.07.2000.
- Regulation on requirements towards putting into market of batteries and accumulators and treatment and transportation of waste batteries and accumulators was adopted by Council of Ministers Decree No 134 dated 17.07.2000.

- Regulation on the cases when permit is required on import, export ad transit of waste and the conditions for its issuing was adopted by Council of Ministers Decree No 166 dated 04.08.2000.
- Regulation on requirements for putting into market of luminescent and other containing mercury lamps, and on the treatment and transportation of spent luminescent and other mercury containing lamps was adopted by Council of Ministers Decree No 260 dated 05.12.2000.
- Regulation on the requirements for soil prevention when sewage sludge from waste water treatment plants is applied for agricultural purposes was adopted by Council of Ministers Decree No 262 dated 06.12.2000.
- Regulation on conditions and procedures for reduction of the pollution caused by waste generated from motor vehicles was adopted by Council of Ministers Decree No 257 dated 9.11.2001.

Charges for products which after use generate wide spread waste suitable for recovery were introduced:

- batteries and accumulators;
- tyres;
- motor vehicles.

The product charge is paid by producers and importers of the products put on the market of Republic of Bulgaria. The charge is paid into an account of NEPF. The funds collected may be spent for separate collection, recovery and/or disposal of spent batteries, used tyres and end-of-life vehicles.

Drafts of 4 regulations are developed by which the process of transposition of the European Union acquis communautaire will be completely accomplished:

- *Regulation on packaging and packaging waste,* transposing Directive 94/62/EC on packaging and packaging waste.
- Regulation on the requirements for disposal of waste containing polychlorinated biphenyls, polychlorinated terphenyls and halogenated monomethyl-diphenyl methane transposing Directive 96/59/EC on disposal of polychlorinated biphenyls (PCB) and polychlorinated terphenyls (PCT).
- Regulation on the order and conditions for treatment of electric and electronic household equipment
- Regulation on requirements for disposal of the waste form titanium dioxide industry transposing Directive 78/176/EC on waste from the titanium dioxide industry, Directive 82/883/EC on procedures for the surveillance and monitoring of environments concerned by waste from titanium dioxide industry and Directive 92/112/EC on procedures for harmonizing the programmes for the reduction and eventual elimination of pollution caused by waste from titanium dioxide industry.

Municipal regulations were adopted by 85 % of the municipalities regulating the management of the municipal and the construction waste on their territories. These regulations reflect the requirements of the national waste management legislation. Above 92 % of the municipalities have developed municipal waste management programmes that have been adopted by the respective Municipal Councils. These programmes are guiding documents for realization of the complex of measures for waste management on municipal level.

7. WORK WITH THE PUBLIC

A set of information materials was issued including:

- National Waste Management Programme (in Bulgarian);
- Summary of the National Waste Management Programme (in English);
- Collection of legal acts on waste management in Bulgarian and in English;
- Brochure for informing the general public for the problems with the paste waste contaminations;
- Report for the implementation of the National Waste Management Programme and proposals for short term measures for improvement of the cleanness of the settlements;
- Brochures "Let's clean Bulgaria".

The materials are disseminated to all municipal and regional administrations in the country.

Spring and autumn competition for most economical project for cleaning of areas polluted with waste and planting are carried out annually within the framework of the national campaign "For clean environment". The competitions are carried out for four groups – for municipalities; for municipalities with predominant Gypsy population; for non-governmental organizations and for schools and extra-school sections.

Information campaigns for the implementation of the municipal waste management programmes of Lom and Kurdjali were organized in 2002. They include:

- competition "I paint cleanness" – project for painting of 30 litter bins funded by MOEW;
- competition for cleanest school in Lom, with the purpose of cleaning the school yards and green areas;
- printing of 3000 copies of the booklet "Where the rubbish goes" and its dissemination in the municipalities of Lom and Kurdjali;
- exhibition of children plastics made by recyclable materials;
- 70 children restore, repair and paint used litter bins in town of Momchilgrad;
- providing of litter bins, planting, painting of benches and cleaning the walls from scribbles;
- presentation of the Waste Management Programme of the municipality of Kurdjali to the local media;
- 10 minute children broadcasts on TV – short games and questions related to the waste, organized every Saturday for 5 weeks on the local television in Kurdjali;
- reflecting of problems related to the environmental protection and the student's ideas for their solving in school newspapers.

All legislative documents in the waste management field as well as current information for past or forthcoming events are available on the web page of MOEW.

8. MONITORING, INFORMATION GATHERING AND CONTROL

Methodological instructions for issuance of permits for carrying out of waste management activities were adopted by the Minister of Environment and Water. These instructions regulate:

- the order and the rules for application for permit issuance;

- the preparation of:

  - application documents for permit issuance;

  - the requests for issuance of decisions for amendment of the permits including prolongation of term of validity of the permits; changing and amendment of the permits as well as the issuance of decisions for stopping the validity of permits.

- the order and the rules for permit issuance;
- the requirements for the scope and content of the permits, as well as the decisions for their issuance, amendment and suspension;
- the possibilities for joint application of the procedure for issuance of permits for waste management activities and the Environmental Impact Assessment (EIA) procedure.

Within the system of MOEW, software program for maintenance of national register for the permits issued is installed. Training of the experts in the Regional Inspectorates of Environment and Water for the methodological instructions and the related software program was provided.

The foundations for the creation of monitoring network for waste was laid (1999) and the objects and the monitored parameters were specified. Up to now the network consists of 59 landfills for municipal waste serving population above 20 thousand inhabitants and it includes the following parameters: cadastral No and geographical position, area occupied, document for legalization, waste quantity landfilled, population served, technology of landfilling.

In regard to the accomplishment of the National laboratory system for waste, the Directorate "Laboratory and analytical activities" (LAA) in the Environmental Executive Agency (EEA) was authorized in 1999. The following waste analyses were included within the authorized activities of Directorate LAA – determination of the content of heavy metals, oil products, polyaromatic hydrocarbons, persistent chlorine organic pesticides, polychlorinated biphenyls. The laboratories of RIEWs are authorized for test parameters for determination of a given component in a specific matrix.

National digital database for municipal and construction waste is established in EEA and a software product was developed and installed for processing of the information. Local databases and software products for their processing on regional level are in operation in RIEW Burgas, Varna, Veliko Turnovo, Plovdiv, Ruse and Stara Zagora since 1999. Register of landfills and past waste contaminations (RLPWC) is maintained through the National System for Environmental Monitoring (NSEM). Database is created and software product is developed in the EEA for processing of the information for industrial waste. Software application for processing of the information for hazardous waste is under development.

Memorandum of understanding was concluded between MOEW and the National statistical institute with the purpose of improving of the coordination and mutual provision of information between the two institutions.

Study and assessment of the information available for the packaging in the country was made and the quantity and the types of packaging were surveyed. Two reports on topic "Database for packaging and packaging waste in Bulgaria" were presented. List of all producers, importers and processing companies in the field of packaging was drawn up.

ГЛАВА II. EXISTING SITUATION AND WASTE MANAGEMENT PRACTICE

2.1. SOURCES OF INFORMATION FOR WASTE

The Ministry of Environment and Water plays leading role in collection, publishing and dissemination of the information for the state of the environment and in particular the information related with the waste management. The Ministry performs these functions through the Executive Environmental Agency and through the system of Regional Inspectorates of Environment and Water (RIEW). The collection, the processing and the management of the information related with the municipal, construction, industrial and hazardous waste on national level is regulated by Regulation *№ 10/ 1998* on the order for filing in of waste related reporting and waste management activities information.

According to the National plan for statistic surveys, the National statistical institute (NSI) carries out annual statistic surveys for the expenditures for environmental protection, industrial non-hazardous and municipal waste. The sources of the dada for the expenditures for environmental protection are the companies, municipalities and other institutions that have spent funds for environmental protection during the current year. The questionnaires related to the industrial waste are filled in by the companies - waste producers and the data for municipal waste – by the municipal administrations.

The information gathered by these two institutions is used for different informative tasks: EEA – for control of the implementation of requirements and instructions, NSI – statistical assessment of the waste quantities at national level. According to the Regulation of the European Parliament and of the Council on waste statistics, the statistical results should be produced following fixed breakdowns at national level from 2004.

Executive Agency "Sea Administration" of the Ministry of transport and communications collects data for ship waste delivered and afterwards the generalized information is submitted to the respective RIEWs with the purpose of subsequent control over the operators of ship waste.

The analysis of the current situation is based on the information on the generation, treatment, disposal and recovery of waste for the period 1998-2001. For the assessment of municipal and industrial waste, data from the National statistical institute (NSI), published in the official year-books were used whereas the information on the hazardous waste is based on the data of EEA included in the annual reports on the state of the environment.

Despite the fact that the quality of the information gathered is being improved during the past few years the monitoring of the waste in Republic of Bulgaria is still not at the desired level. The main problems of the reporting, registration, processing and analysis of the waste management information for the period in question are:

- the changes in the waste classification and the transition from national nomenclature of waste to the European Waste Catalogue (EWC) that impede comparison of the data obtained during the period before and after 1999. The application of the new classification requires a longer term so as the proper waste codes for each case to be specified;
- only the landfills for waste serving settlements with organized waste collection can be used as reliable source of information in the field of waste management and as a result the information for the total quantity of the municipal waste generated is inaccurate to certain degree due to the data from unorganized landfills which are added to the total quantity by assessments. The same applies to the data for the composition of the municipal waste and the fractions collected separately;

- the information for the municipal waste quantities presented by the municipal administrations is still insufficiently reliable. The problem is founded on the lack of weighbridge for weighting of the waste delivered to the landfills and therefore the accounting of the waste quantities is based on transport documents;
- there are low number of studies for the morphological content of the waste;
- the information for the generation and the management of certain groups wide spread waste as waste oils, packaging waste, spent batteries and accumulators, fluorescent lamps etc. is insufficient;
- despite the process of introduction of software products for processing of the information already started in EEA, considerable part of the information is collected and processed on paper;
- the data for certain groups industrial and hazardous waste are incomplete mainly because of the fact that the companies do not pay the necessary attention for correct filling of the obligatory annual reports.

2.2. ANALYSIS OF THE CURRRENT SITUATION AND ASSESSMENT BY WASTE TYPES

2.2.1. Waste quantities

The waste quantities generated during the period 1998 – 2001 are presented by main groups in Table 1.

Table 1. Waste quantities generated during the period 1998 - 2001

Waste types / year	Quantity [thous. tons]			
	1998	**1999**	**2000**	**2001**
Municipal	4103	4141	4224	4003
Industrial non-hazardous	8389	7719	8164	8184
Hazardous	548	706	758	756

Source: The data for municipal and industrial non-hazardous waste are presented by NSI and the data for the hazardous waste – by EEA

The above shown quantities do not include the industrial waste form prospecting, extraction and treatment of mineral resources.

These results indicate relatively constant waste generation levels during the period in question at the rate of 12,7 – 13 million tons annually.

2.2.2. Municipal waste

The data for the municipal waste are gathered by the municipal administrations, as they are responsible for the management of the municipal waste. The sources of information are the municipal landfills serving the settlements where a system for organized waste collection exists.

During the period 1998 – 2000 the municipal waste quantity collected and deposited on municipal landfills varies within the range between 498 and 518 kg per inhabitant per year (Table

2). The municipal waste generation rate has reached highest degree in 2000 when 3318 thousand tons municipal waste was reported collected from 1190 settlements where 78,6 % of the population of the country lives.

Table 2. Reported municipal waste quantity and municipal waste generation rate

Year	**Collected waste quantities** *tons*	**Population served** *inhabitants*	**Total population** *inhabitants*	**Generation rate** *kg/inh./year*
1998	3196836	6414948	8230371	498
1999	3213349	6353133	8190876	506
2000	3318022	6402154	8149468	518
2001	3210846	6360064	7928901*	505

Source NSI

*the data are obtained form the census on 01.03.2001.

Considering the data presented in tables 1 and 2 an inference can be drawn that the quantities of the reported municipal waste are still higher comparing to the quantities determined by expert assessment. The reasons for the higher quantities are due to the practice the quantities of the collected waste to be assessed indirectly on the basis of the transport documentation. This is because of the weak control exercised by the municipal administrations over the companies that carry out waste collection and disposal and due to the lack of weighbridges for measuring of the waste destined for landfilling. The variations in the waste generation rate can be explained by the inaccurate information for the permanent residents of a given settlement.

2.2.3. Construction waste

The data for the construction waste quantities collected during the period 1998 – 2001 are presented in Table 3.

Table 3. Construction waste quantities reported by the municipal administrations for the period 1998 – 2001.

Year	**Construction waste quantities**		
	on landfills for municipal waste	on specialized landfills	Total
	$м^3$	$м^3$	$м^3$
1998	420920	601944	1022864
1999	408340	601015	1009355
2000	322423	329070	651493
2001	316591	333550	650141

Source NSI

The data presented above and the experience gathered during the past few years allows the following conclusions to be drawn:

- the construction and demolition waste quantities remains relatively constant during the period 1998 – 2001;
- the reported construction waste quantities are considerably lower than the expected quantities. This can be inferred form the comparison with the other generated waste categories for example: municipal waste as well as the existence of considerable construction and repair works especially in the big cities;
- not all municipalities report the quantities of the collected construction waste yet. In many cases the municipal administrations report the construction waste, soil spoil and inert waste together and the generated construction waste can not be assessed accurately.

2.2.4. Industrial non-hazardous waste

The data for the industrial waste are subject to special statistical survey, which includes the enterprises that produce waste. Information for the industrial waste generated during the period 1999 – 2001 by groups according to Annex 1 of the *Order No RD-323/1998 on waste classification* are presented in Table 4. The wastes form the prospecting, extraction and treatment of mineral resources are excluded form the analysis. The data for 1998 are not shown in this table due to the different waste classification.

Table 4. Quantities generated waste by main groups according to Annex 1 of Order No RD-323/1998.

Group	**Group title**	**Waste quantity**		
		1999	2000	2001
		thousand tons	*thousand tons*	*[thous. tons]*
02	Wastes from agricultural, horticultural, hunting, fishing and aquacultural primary production, food preparation & processing	234,632	172,437	195,247
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels & furniture	128,323	127,541	119,686
04	Wastes from the leather, fur and textile industries	7,797	5,872	5,831
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal	2,846	4,235	1,050
06	wastes from inorganic chemical processes	452,047	703,757	818,942
07	wastes from organic chemical processes	1,710	3,363	2,934
08	Wastes from the manufacture, formulation, supply and use (mfsu) of coatings (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks	0,096	0,032	0,031
10	Inorganic wastes from thermal processes	6551,177	6629,679	6436,088
11	Inorganic metal-containing wastes from metal treatment and the coating of metals; nonferrous hydro-metallurgy	18,269	19,210	0,435
12	Wastes from shaping and surface treatment of metals and plastics	55,185	49,048	46,271

Group	Group title	Waste quantity		
		1999	2000	2001
		thousand tons	*thousand tons*	*[thous. tons]*
13	Oil wastes (except edible oils, 05 and 12)	0,104	0,110	0,062
15	Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified	9,209	11,591	11,997
16	Wastes not otherwise specified in the list	33,854	29,632	130,545
17	Construction and demolition wastes (including road construction)	65,511	66,395	115,229
18	Wastes from human or animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)	2,574	1,152	0,332
19	Wastes from waste treatment facilities, off-site waste water treatment plants and the water industry	84,330	294,697	258,358
	Total waste quantities	**7647,662**	**8118,750**	**8143,036**

Source: NSI

Despite the fact that the total quantity of the industrial non-hazardous waste generated during the period is relatively constant there are considerable variations in the waste quantities reported by the different groups. It creates an impression that there is a considerable decrease in the production of waste form food preparation and processing and almost doubled comparing to 1999 quantity of the wastes form inorganic chemical processes.

These variations should not be explained only with the economic activity and the changes in the production output of these industrial branches but probably they are due to negligence in the reporting and reclassification of some wastes.

An attention should be paid to the relatively low quantity of the reported wastes form ferrous and non-ferrous metals, waste papers, plastics and glass for which the figures are significantly lower than the quantities of the waste recycled in the country.

During the period in question the production of waste from thermal processes takes the largest share, followed by the waste resulting from inorganic chemical processes and the wastes form agriculture and food preparation and processing industry.

The biggest waste quantities are produced in the regions of Stara Zagora, Sofia and Varna. This is due to the existence of large waste producers in these regions as the thermo-electric power plants in the complex “Maritza Iztok”, “Kremikovtzi” Ltd. – Sofia, “Umikor Med” Ltd. – town of Pirdop, “Stomana Industry” Ltd. – town of Pernik, “Agropolyhim” Ltd. – town of Devnya, “Solvay Sody” Ltd. – town of Devnya.

2.2.5. Hazardous waste

Information for hazardous waste on the territory of the country is collected only by the structures of the MOEW.

The quantities of the hazardous waste generated during the period 1999 – 2001 by groups according to Annex 1 of the Order No RD-323/1998 on waste classification are presented in Table 5. The presented data are based on the annual reports submitted by the companies that generate or treat hazardous waste.

According to the available information the total quantity of the hazardous waste generated during the past two years of the period remains relatively constant and is evaluated to 757 thousand tons in 2000 and 755 thousand tons in 2001 respectively.[1] These figures are about 7% higher than the hazardous waste quantities reported in 1999.

Table 5. Hazardous waste quantities reported by groups for the period 1999 – 2001.

Group	**Group title**	**Waste quantities** [tons]		
	year	**1999**	**2000**	**2001**
02	Wastes from agricultural, horticultural, hunting, fishing and aquacultural primary production, food preparation & processing	4582,0	2328,3	747,1
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels & furniture	6614,3	8618	13146,5
04	Wastes from the leather, fur and textile industries	35164,4	27530,2	39612,9
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal	22052,4	156902,0	157739,4
06	Wastes from inorganic chemical processes	28922,2	21436,7	16020,7
07	Wastes from organic chemical processes	13029,4	8945,6	7920,8
08	Wastes from the manufacture, formulation, supply and use (MFSU) of coatings (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks	2595,8	170,4	160,3
09	Wastes from the photographic industry	1,1	0,7	1,3
10	Inorganic wastes from thermal processes	348718,6	379444,5	389402,5
11	Inorganic metal-containing wastes from metal treatment and the coating of metals; nonferrous hydro-metallurgy	25928,8	25239,8	23773,3
12	Wastes from shaping and surface treatment of metals and plastics	30161,4	24324,8	28703,5
13	Oil wastes (except edible oils, 05 and 12)	18289,6	15676,5	13606,4
14	Wastes from organic substances used as solvents	891,6	29,2	25,5
15	Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified	479,6	3259,3	2277,5
16	Wastes not otherwise specified in the list	2215,8	2937,6	3324,5
17	Construction and demolition wastes (including road construction)	-	306,4	444,2
18	Wastes from human or animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)	855,4	1171,6	648,0
19	Wastes from waste treatment facilities, off-site waste water treatment plants and the water industry	164090,9	77316,5	57120,3
20	Municipal wastes and similar commercial,	1450,6	2178,6	1091,5

[1] These quantities do not include the hazardous waste from prospecting, extraction and treatment of mineral resources.

Group	Group title	Waste quantities [tons]		
	industrial and institutional wastes including separately collected fractions			
	Total waste quantities	**706043,8**	**757816,5**	**755766,0**

Source EEA

The data reported by the industrial enterprises show that in 2001 the hazardous wastes from thermal processes take the largest share (53%), followed by the waste resulting from oil treatment (21%) and the wastes from waste water treatment plants (8%). In 2000 their share was 50%, 21% и 10% respectively.

The above shown quantities should be considered as the minimal as they just represent the reported waste quantities. Grounds for this conclusion are given by the lower reported quantities for some groups wide spread hazardous waste as waste oils, fluorescent lamps, batteries and accumulators etc., due to the incomplete information presented by the companies and the lack of separate collection.

On the other hand for the interpretation of the presented results it should be taken into account that the national hazardous waste classification is broader in scope than the hazardous waste list specified in Decision 94/3/EC. This fact and the approach applied by the competent authorities that the waste is considered as hazardous until the contrary is proved, is the basic reason for the relatively high quantities of the reported hazardous waste in the country.

TRENDS

The trends for the levels of the generated municipal, construction, industrial and hazardous waste can be summarized as follows:

- The quantity of the municipal waste generated will grow up as a result of the expected economic growth, the increase of the incomes and of the consumption by the private households. Despite this fact it can be foreseen stabilization of the municipal waste quantities recorded by the national statistics, as a result of the strengthening of the control by the municipal administrations and of the improvement of the quality of the information acquired. The installation of weighbridges at the landfills for municipal waste will also contribute to the measuring of the real waste quantities.
- The variations in the activities of the different industrial sectors and of the big waste producers should be taken into account for the prognosis of the trends for generation of industrial non-hazardous waste. The future development of the branches that are the main waste producers as the energetics (thermo-electric power plants using coal), metallurgy, chemical and food preparation and processing industry will be decisive for the total quantity of the waste generated in the country. As a whole in short and middle term aspect, it can be foreseen that the current levels will remain the same as a result of the simultaneous influence by two groups of factors. By one hand the increase of the costs for waste disposal is expected to lead to undertaking of adequate measures for waste prevention and recycling by the companies concerned. The implementation of the requirements of the Directive on integrated pollution prevention and control (IPPC) especially the requirements related to the best available techniques will have similar influence. On the other hand the expected economic growth and the increase of the production output in a series of industrial sectors inevitably will be related with increase

of the quantity of the generated waste. An increase of the waste quantities generated as a result of the implementation of the requirements for environmental protection in regard to the limitation of the emissions of harmful substances in the water and in the air (e.g. sewage sludge, residues from flue gas cleaning etc.) also can be foreseen with certainty.

- In middle and long term aspect decrease of the quantity of the generated hazardous waste can be foreseen as a result of the implementation of the measures envisaged in the respective company's programmes in regard to the prevention of the waste generation and limitation of the hazardous substances content in the waste.

2.3. EXISTING WASTE TREATMENT PRACTICES

The objective of the present part of the programme is the existing state of the waste collection, transportation, recovery and disposal in the country during the period 1998 – 2001.

2.3.1. Collection

In the end of 2002 the organized municipal waste collection covered 80% of the population of the country. Municipal waste collection is organized in 1377 settlements, which corresponds to 24,2% of the total number of the settlements in the country. Despite the fact that above 99% of the urban population is covered by waste collection services the rural population covered by waste collection schemes is slightly above 33%. There are considerable differences among the regions by this indicator. The most favourable situation is in Sofia where 100% of the inhabitants are covered, Gabrovo – 93,2% and Kyustendil 89,5%. The population of the regions of Silistra – 41,8%, Turgoviste – 51,3% and Razgrad – 51,5% is covered to the slightest degree by waste collection services.

Stationary container system is used for the collection of municipal and mixed municipal/commercial waste. The containers are placed on specific places where they are served by the specialized vehicles. A transport-container system is used in some regions. Container carriers are used for transportation of the big containers to the landfills where they are discharged and transported back to the place of collection. This transportation system is used mainly for the wastes from the commercial centres, dwelling-places etc. It is also used in residential areas and settlements where the transport access for the big trucks is difficult. Containers with volume of 4.0 m^3, 1.1 m^3 are used. Plastic containers with volume of 240 l are coming in during the past few years.

There are different decisions taken by the municipalities for waste collection from the public places, schools, parks etc. and the volume of the containers used varies within the limits of 0,4 – 0,75 m^3.

The collection by bags from the source of generation is not applied on a mass scale in no one municipality in the country.

The existing system for collection of waste for recycling as papers, glass, plastic and metals is limited to buying back of separate collected waste from the population or collection of waste generated by different manufactures. The system is organized independently of the municipal systems for municipal waste collection on the basis of buying back centres, collection from the source of generation (for large quantities) and conducting of periodical campaigns. The collection of waste destined for recycling is carried out depending on the current market demand and is restricted to those waste for which the costs for collection, sorting and transportation are lower than the market price of the collected materials, paid by the final recycling enterprise.

The collection of hazardous waste with a purpose of recycling is limited to buying back of lead-acid batteries, waste oils and waste oil products. Establishment of a system for collection of fluorescent lamps and their delivery to recycling installations abroad is starting. The same approach is applied to the chemical preparations whose term of appropriate use is expired such as pesticides – some of them are collected and stored in a safe storage and containers and others are delivered to disposal installations abroad.

2.3.2. Transportation

The main types of transport vehicles used for transportation of municipal waste to the landfills are: self-loading vehicles and container carriers. Various trucks and superstructures are used. The waste transportation vehicles are worn out and the average age of the vehicles is above 10 years. During the past few years there is a tendency towards import of specialized second hand equipment from West Europe carried out by some companies.

The transportation of waste to the landfills is carried out by means of specialized trucks without using transfer stations. In general the landfills are located near the settlements at a distance of 3 – 7 km.

The main challenge to the companies carrying out organized waste collection during the next years will be the increase of the transport distances as a result of the transition form the existing disposal system to regional disposal facilities.

The current transportation of industrial waste is characterized by shipment of big quantities on small distances. Basically this is due to the existence of large percentage of waste disposed by the generators in their own facilities.

The type of the transport means used for industrial waste varies much more comparing to the same for the municipal waste:

Vehicle transportation	This is the widest spread means of hazardous waste transportation at the moment. The transportation is carried out through transport means owned by the producer of the waste. Renting of transport vehicles is less spread practice and the companies carrying out the transportation generally are not specialized in waste management activities and the rendering of the service is performed through contracting in each specific case. The role of the municipal waste collection companies is limited to the servicing of the smaller waste generators.
Rail transportation	It finds limited application in transportation of spillage waste and shipment of ferrous metal scrap. Its importance will grow up with the increase of the waste quantities generated by the industry.
Conveyor transportation	It finds restricted application as internal transportation in the energetic industry. By the reconstruction of the capacities of the complex “Maritza Iztok” its role probably will become more important.
Hydro transportation	It finds wide spread application as internal transport for waste transportation through pipeline to facilities such as ash-ponds, slug-ponds and tailings-ponds in energetics, metallurgy and chemical industry. By the implementation of the requirements for

reconstruction or construction of new landfills the use of such transport will be limited.

Water transportation — It is not used and can not find wide spread application except the cases of import or export of waste. It is used in collection and transportation of ship waste – liquid (oil containing water, oil residues, sludge etc.) and solid (household waste).

The transportation of hazardous waste is carried out mainly by the holders of the waste and in limited cases by using external transport. The use of specialized vehicles is limited.

Like the situation for the other types of waste the transportation is carried out mainly on the territory of the sites or close to the enterprises.

The long distance transportation is typical for the waste delivered for recovery.

2.3.3. Landfilling

The landfilling of waste remains the main method for waste disposal in the country. Information for the waste quantities landfilled by years and types is presented in Table 6.

Table 6. Waste quantities landfilled during the period 1998 - 2001

Year	Waste types	Unit	Quantity of the waste landfilled
1998	Municipal	[thous. tons]	3167
	Construction	[thous. m^3]	1018
	Industrial non-hazardous	[thous. tons]	8501
	Hazardous	[thous. tons]	237
1999	Municipal	[thous. tons]	3197
	Construction	[thous. m^3]	1022
	Industrial non-hazardous	[thous. tons]	7120
	Hazardous	[thous. tons]	517
2000	Municipal	[thous. tons]	3271
	Construction	[thous. m^3]	534
	Industrial non-hazardous	[thous. tons]	7558
	Hazardous	[thous. tons]	478
2001	Municipal	[thous. tons]	3198
	Construction	[thous. m^3]	648
	Industrial non-hazardous	[thous. tons]	7426
	Hazardous	[thous. tons]	517

Source NSI for municipal, construction and non-hazardous waste, EEA for hazardous waste

During the period 1998 – 2001, 83 – 96% of the total amount of the industrial non-hazardous waste produced were disposed by landfilling as in 2001 this percentage was 91%. The percentage of the wastes that are landfilled on specially engineered landfills operated by the enterprises remains constant at the rate of 95%. The rest is landfilled on landfills for municipal waste.

Landfilling is also the main method for disposal of *hazardous waste* in the country and in 2001 it comes up to 68% of the total amount of waste production. In comparison to the preceding year an increase by 5% of the landfilled waste was accounted. The quantity of the landfilled waste in relation to the quantity of the produced waste is above 95% for some waste groups under entries 03.00.00 and 19.00.00. The quantity of the landfilled waste in relation to the quantity of the produced waste is above 85% for some waste groups under entries 06.00.00; 07.00.00 and 15.00.00. Approximately 94% of the landfilled hazardous waste are landfilled on specialized landfill sites or other type of storage facilities operated by the enterprises. The rest of the wastes are landfilled on municipal landfills. These wastes are mainly sludge from wastewater treatment plants, casting sands and used metallurgic stocks.

2.3.4 Incineration

Incineration is still not a wide spread practice in the country and in actual fact currently it is not used for incineration of municipal waste.

During the period 1998 – 2001 the non-hazardous industrial wastes disposed by incineration varies within the limits of 0,5 - 0,8% of the total amount of the waste generated and in 2001 their quantity amounted to 42 thousand tons. The largest percentage of the wastes disposed by incineration take the wastes form wood processing and the production of paper, cardboard, pulp, panels and furniture (above 90% of the total amount) and the wastes from food preparation and processing.

For the year 2001, 101 763 tons hazardous waste disposed by chemical methods and incineration were reported while in the year 2000 this quantity amounted to 159 262 tons. The decrease of the total quantity is mainly due to the amount of the oil sludge incinerated during that year by “LucOil Neftohim Burgas” Ltd. – town of Burgas.

The incineration is typical method for disposal of hospital waste – 35% of the annually generated waste are incinerated in small installations that in most cases do not fulfil the present-day requirements.

2.3.5. Recycling and recovery of waste

According to the data from NSI in 2001 the enterprises accounted 349 thousand tons industrial non-hazardous waste delivered for recycling, which amounted to approximately 4,3% of the total generated quantity (in comparison during 2000 this quantity was 276 thousand tons). The largest percentage is taken by the wastes from mechanical and surface treatment of metals and the wastes form inorganic thermal processes.

The data reported by the industrial enterprises shows that in 2001 the quantity of the hazardous wastes delivered for recovery amounted to 136 123 tons which is 20 tons more than the year 2000. These are mainly hazardous wastes containing metals such as aluminium slag, lead slag, zinc ash and zinc sludge and used lead acid accumulators.

2.3.6. Other treatment methods

The amount of the wastes treated by physical and chemical methods amounts to 193 936 tons. The greatest part of these wastes is taken by the wastes from the preparation of drinking water or water for industrial use (98%).

The usage of biological treatment methods in the country is limited. In 2000 the quantity of the waste treated using these methods amounted to 7 632 tons mainly sludge from waste water treatment plants.

There is no established usage of waste composting in the country, except the household composting applied in single municipalities.

PROBLEMS AND CONSTRAINS

The main problems in regard to the waste treatment in the country can be summarized as follows:

- the funds spent for waste management on all levels are insufficient and the investments related to the waste management are limited;
- the implementation of the waste management hierarchy already adopted will be hindered if:
    - requirements for reduction of the quantity of the waste going to landfills are not laid down;
    - programmes for separate waste collection are not implemented;
    - increase of the fees for landfilling is not imposed.
- the limited scope of the systems for organized municipal waste collection contributes to uncontrolled dumping of waste and formation of new waste contaminations and dumpsites;
- the waste collection equipment and the containers used are worn-out to a great extent;
- the public is not enough informed for the risks to the environment resulting from the inadequate treatment of the waste. The participation of the population in the applied separate collection schemes should be increased and to this end training and conducting of information campaigns have to be started.

TRENDS

The formulation of the trends and the prognosis of the future state of the waste treatment in the country are in direct dependence on the one hand on the amendments of the waste management legislation and its implementation by the competent authorities and on the activities of the economic operators concerned on the other. The following main trends can be specified:

- Increase of the costs for collection and treatment of municipal waste as a result of the transition towards regional disposal facilities and of the realization of different schemes for separate collection.
- Increase of the percentage of the waste recycled as a result of the implementation of the legal requirements and the increase of the costs for disposal.
- Increase of the export of hazardous waste for recovery and/or disposal due to the lack of suitable facilities with enough capacity in the country.

2.4. WASTE TREATMENT FACILITIES

The existence of appropriate recovery and disposal capacity is of crucial significance for the environmentally sound waste management. The objective of the present part of the programme is the existing situation of the waste treatment infrastructure in the country and the respective problems and tendencies.

2.4.1. Landfills for waste

Municipal waste

By 31.12.2001 according to the data from NSI, the number of landfills serving the waste collection schemes is 663 and 3318 thousand tones municipal waste have been landfilled thereon. Fifty-nine (59) of these landfills serve the settlements with population above 20 000, which corresponds to approximately 70% of the population of the country. In 2001 within the framework of the project "National programme for reduction of the risk from landfills of waste and past contaminations with waste", these landfills have been examined, inventoried and assessed (Figure 1). The results of the inventory allow the assessed landfills to be classified depending on the risks to the environment and human health in the following four groups:

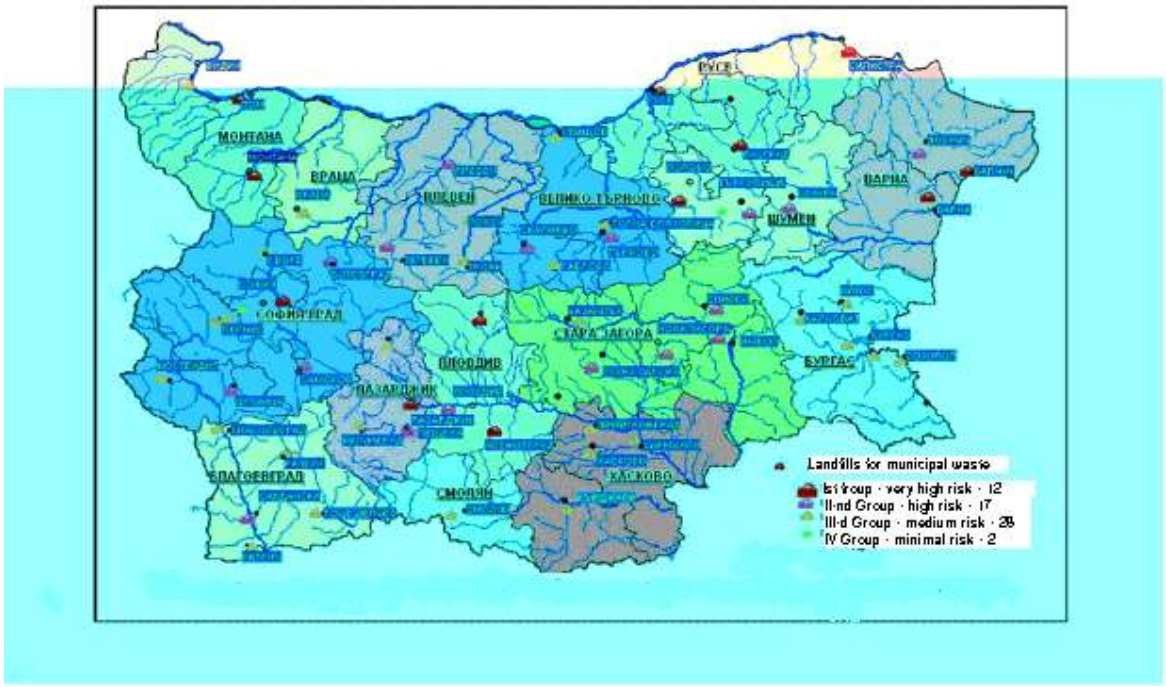
I-st group	–	very high risk	– 12 landfills
II-d group	–	high risk	– 17 landfills
III-d group	–	medium risk	– 28 landfills
IV-th group	–	minimal risk	– 2 landfills

The results of the project were used as a basis for establishment of "Register of landfills and past waste contaminations" in the framework of the National system for environmental monitoring (NSEM) maintained by EEA. Till the end of 2001, information about 275 landfills has been introduced in the register.

According to the data from RIEWs and municipal administrations, 5135 dumpsites and areas polluted with municipal waste have been identified on the territory of the country. 551 of these dumpsites were closed in 2002.

By the implementation of the National Waste Management Programme, 12 landfills (Antonovo, Vratza, Gorna Malina, Gotze Delchev, Karlovo, Madan, Rudozem, Sandanski, Troyan, Suhodol, Tzalapitza and Varna) that fulfil the requirements of Directive 1999/31/EC on landfill of waste were constructed, reconstructed and put into operation during the period 1999-2002.

Figure 1.



At the same time, by the financial support of EU through programme ISPA, the construction of 6 new regional landfills for municipal waste – Montana, Pernik, Ruse, Sevlievo, Silistra and Sozopol has started. In 2003, the construction of other 8 regional landfills continued through financing by the state budget (Figure 2) – Dobrich, Dospat, Lovech, Omurtag, Oryahovo, Petrich, Harmanli, Shumen, Razgrad and Yambol.

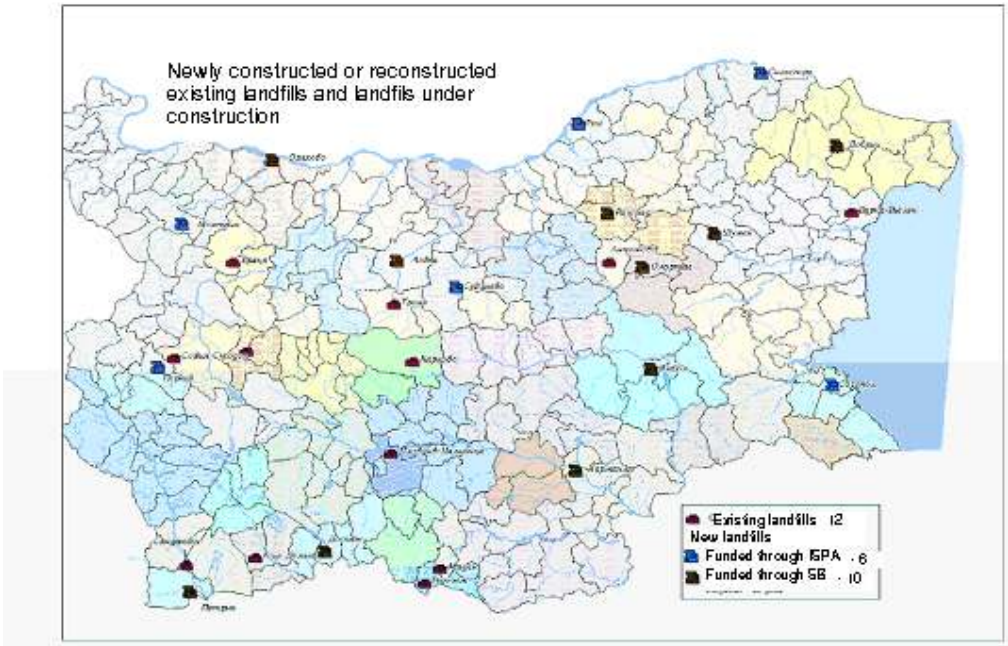


Figure 2.

Industrial non-hazardous waste

At the present moment, 84 landfills for industrial non-hazardous waste are identified including 74 in operation and 10 closed. 15 of the landfills in operation are for inert waste. The total number of the landfills does not include the facilities for disposal of waste resulting from the opening, extraction and treatment of mineral resources and the sites for refilling of the work-off areas in the overcast mines for lignite coals with ashes resulting from the combustion of coals (code EWC 10 01 01), performed according to the approved plans for exploiting of the mines.

In the general list of landfills there are 29 facilities with hydro-transportation of waste in energetic, chemical industry, construction industry, metallurgy and food industry. The main part of the facilities falling within this list are used for disposal of ashes from combustion of coals (EWC 10 01 01), sludges from washing and cleaning (EWC 02 01 01), soil from cleaning and washing beet (02 04 01) and off specification calcium carbonate (EWC 02 04 02).

Facilities where the waste is unloaded in order to permit its preparation for further transport for recovery, treatment or disposal and the facilities for storage of waste prior disposal for period less than one year are not included in the above mentioned number.

The main part of the landfills have been constructed in 70s and 80s years, according to the legislation in force in that period that has regulated the requirements for the preparation of landfill foundation and the laying of isolating clay layer, for the stability of the landfill body etc.

Hazardous waste

At the moment 18 landfills for hazardous waste are in operation in the country but no one of these landfills meets the environmental protection requirements currently in force. All existing landfills are operated by the enterprises that produce the waste and there are no landfill sites in the country that take hazardous waste with commercial purpose.

2.4.2. Incineration of waste

Incineration of waste is not a wide spread practice in the country. Currently there are no installations for incineration of municipal waste in the country. The main reasons for this fact are the high costs for construction of incineration facilities as compared to the existing usage of waste landfilling, the relatively low caloric value of the mixed municipal waste in the country and the limited financial resources of the municipalities for investment in municipal waste disposal infrastructure.

In the field of disposal of hazardous waste two installations are currently in operation used mainly for the oil sludge wastes generated by "Lukoil Neftohim Burgas" Ltd. These are rotary kiln installations for incineration and they are located on the site of the refinery. The installations are constructed in the end of 80s and need reconstruction in order to be adapted into compliance with the environmental legislation.

Installations for incineration are constructed in some of the bigger hospitals serving the regional centres of the country. These facilities as a whole do not fulfil the requirements for minimal temperature of incineration and for residence time of the combustion air and they are not equipped with the necessary pollution abatement equipment. The adaptation into compliance of these facilities with the legal requirements is either impossible or it will entail high costs per unit efficient capacity comparing to the construction of new installations. The closure of the installations requires construction of replacing facilities for waste treatment and/or disposal including new incinerators, autoclave and microwave installations. The existing incinerator in Military Medical Academy – Sofia, which is equipped with the necessary pollution abatement facilities and the new modern installation for incineration of infectious and pathological hospital waste in Sofia with annual capacity of 2800 tons may be shown as an exclusion of the general situation in the country.

The second main group of installations for incineration of waste are located at the main airports in Sofia, Burgas and Varna and at the ports in the later two towns. The condition of these installations is identical to the situation of the installations for incineration of hospital waste.

The enterprises of the cement industry manifest interest for examination of the possibilities for reconstruction and equipment of the existing installations in order to incinerate different types of waste as additional fuel during the production processes. At present positive decision for Environmental Impact Assessment was issued to "Zlatna Panega" Ltd. for the project "Installation for recovery of used tyres and other waste" and a permit for incineration of waste according to Article 37 of RHIWEA has been issued to the same plant.

2.4.3. Recycling installations

The existing infrastructure for recycling of waste is relatively well-developed on the basis of installations put into operation during the 70-tees and 80-tees. The existing enterprises and the situation of the recycling industry as a whole are presented by types of recyclable materials.

Paper and paperboard

The total capacity for recovery of paper and cardboard waste is assessed to about 200 thousand tons and includes the following enterprises from the cellulose – paper industry – "Trakya-Papir" – town of Pazardjik, "Belovo" – town of Belovo, "Kostenetz HHI" – town of Kostentz, "Nikopol" – town of Nikopol "Tzelhart" – town of Stamboliiski, "Pirinhart" – town of Razlog and "ZKMO-Kotcherinovo" – town of Kotcherinovo. Limited paper waste quantities are recovered in the production of construction plates by "Knauph Gypsfaser" Ltd.

During the past few years significant fluctuations in the activity of these companies and in the production output volume may be seen. As a result during the past few years the recovered paper and paperboard quantity is about 100 thousand tons per year, which amounts to about 50 % of the capacity of the recycling enterprises.

Plastics

The recovery of plastic waste in the country is concentrated in two major enterprises – "Himik" Ltd. – town of Asenovgrad where recovery of LDPE, HDPE, PS, PVC, PP is possible and "Fenix Plastic" Ltd. – town of Turgoviste where mainly LDPE is recovered. The capacity of the two enterprises is estimated to about 20 000 tons per year. There is also limited capacity for recovery in "Podem Plast" Ltd. – village of Podem, municipality of Dolna Mitropolia and "Evroplast" Ltd. – village of Sklave, municipality of Sandanski.

The real waste quantity recovered in the country is considerably lower comparing to the possibilities for recovery and the recovery is directed entirely towards foil materials at the rate of 450 – 600 tons per month[2].

The number of the small plastic recycling companies is increased in the recent years and according to the expert assessments the waste quantities recovered by these companies are about 600 – 800 tons per year.

Experiments for buying back of PET by buying centres has been started in 2001 in different regions of the country. The collected waste quantity is exported for recycling abroad after pre-treatment – shredding and baling.

Glass

The existing producers of glass in the country with potential for recycling of waste glass are "Stind" Ltd. – Sofia, "Drujba" Ltd. – town of Plovdiv, "Rubin" Ltd. – town of Pleven, "Kitka" Ltd. – town of Novi Pazar, "Interior" Ltd. – town of Elena, "Belopal" Ltd. – town of Belolav, Varna region. There is no appropriate infrastructure for sorting, separation and processing of glass waste in the country.

By the beginning of 2003 only "Stind" Ltd. – Sofia accepts glass waste for recovery. Periodically the plants in towns of Plovdiv and Pleven accept waste while the rest of the enterprises in actual fact have stopped the acceptance of waste.

The annual quantity of the recycled glass waste does not exceed 15 000 tons mainly production waste from the bottle companies.

Metals

[2] Above 50% of the waste is imported.

It can be assumed that as a result of the existence of market for metal waste within the country and abroad and because of the higher number of companies authorized to carry out activities with such waste, the capacity for recovery is not a limiting factor for the recycling in the country. The capacity of the main enterprises for recovery of steel scrap and cast iron "Stomana Industry" Ltd. – town of Pernik and "Kremikovtzi" Ltd. – town of Sofia, which amounts to about 750 thousand tons per year, exceeds the real quantity of the waste collected.

There are no enterprises for recovery of scrap from steel alloy/stainless steel and the collected wastes are exported after pre-treatment and sorting.

The aluminium, copper and copper alloy wastes are recovered abroad after sorting, baling and/or pre-treatment by pouring.

Lead-acid accumulators

The existing installations for recovery of waste lead-acid accumulators in the country – "OZK" – town of Kurdjaly and "Monbat" – town of Montana have capacity at the rate of 23 000 tons per year and they are able to provide for the recovery of the waste collected in the country.

The necessity of considerable investments for modernization of the installation in "OZK" Ltd. and finding of technical solution for recovery of the polymer components and the electrolyte will be the main challenges before the recovery companies for the next few years.

Waste oils

The existing capacity of the only enterprise authorized for regeneration of waste oils "Lubrika" (5 000 tons) does not allows the whole waste quantity generated in the country to be recovered.

The relatively limited capacity of the installation as well as the problems related to the disposal of the residues after the regeneration and the considerable percentage of the waste being incinerated in installations that do not meet the legal requirements are the main factors that exert influence on the activity of the company.

Used tyres

By means of funding allotted by the EMEPA to consortium "Gumi Eco" – town of Sofia, two production lines for recovery of used tyres are put into operation in 2003 with total capacity of 4 tons per year located in village of Gaber, municipality Dragoman. The materials obtained from the recovery of the used tyres are used for the production of end products – insulation materials and others.

2.4.4. Composting installations

The composting of waste is not wide spread practice in the country and there are no composting facilities that take waste for recovery. The only facility that has obtained permit is the site for composting of waste mycelium and sludge from the waste water treatment plant serving the production waste of "BIOVET" Ltd. – town of Pestera.

2.4.5. Installations for pre-treatment

Pre-treatment of waste is applied in limited cases for industrial and hazardous waste. As a whole the installations are constructed at the place of waste generation. There are no installations for separation

and anaerobic digestion of municipal waste, installations for dismantling of end-of-life vehicles and household electric and electronic equipment, installations for shredding of end-of-life vehicles etc.

Pre-treatment of waste is applied mainly for the sludge from municipal and industrial waste water treatment plants basically by dewatering and stabilization of the sludge.

During the past few years an increase of the number of the installations for briquetting of wood and agricultural waste (straw) may be seen.

PROBLEMS AND CONSTRAINS

The main problems in regard to the treatment, recovery and disposal of waste can be summarized as follows:

- the lack of technical capacity for recovery and/or disposal of significant part of the generated hazardous waste in the country is one of the main factors leading to illegal disposal of the waste, discharge in the sewage and uncontrolled disposal in facilities not suitable for this purpose;
- great part of the existing facilities and installations for disposal as landfills and incinerators do not meet the legal requirements and the modern technical standards;
- NIMBY (not in my back yard) syndrome hinders additionally the construction of new disposal facilities and installations;
- the construction of replacing capacity taking into account the quantity and the type of the waste generated will entail huge investments for the recovery and disposal infrastructure. Additional problem is the fact that the investments should be made in relatively short period of time;
- the necessary investments for environmental protection as well as the entire implementation of the environmental legislation necessitate careful planning on company's level;
- necessity of increase of the fees paid by the households due to the transition towards regional facilities for disposal of municipal waste, the higher costs for transportation and the necessary investments for buying of new specialized equipment;
- closure of the existing landfills for waste will entail significant financial resources;
- the private investments for disposal of waste are still insignificant.

TRENDS

The trends for the future development of the national infrastructure for recovery and disposal of waste are in direct consequence of the changes in the legislation during the recent years and may be summarized as follows:

- increase of the costs and investments for treatment, recovery and disposal of waste as a result of the implementation of the legislation and of the modern technical standards;
- transition towards regional facilities for disposal of waste;
- introduction of the necessary equipment and practice for incineration of waste as alternative fuel in the cement industry;
- introduction of additional and reconstruction of existing capacity for recycling of waste with a view of achieving the targets set on national level;
- introduction of new methods and technologies for treatment of waste (e.g. physical and chemical treatment, composting) in relation to the existing changes of the legislation.

CHAPTER III. INSTITUTIONAL FRAMEWORK AND CONTROL. ROLE OF THE PUBLIC SECTOR

3.1. INSTITUTIONAL FRAMEWORK

The obligations and the responsibilities of the state and local authorities in regard to the organization, permitting, financing, supervision and control of the waste management activities are regulated by the Waste Management Act (WMA) and the secondary legislation adopted by virtue of the Reduction of the Harmful Impact of Waste upon the Environment Act (RHIEWA). This secondary legislation shall apply until new regulations are adopted as far as they do not contradict to the WMA.

3.1.1. Responsibilities of the institutions and the local authorities

🕮 Ministry of Environment and Water

The Ministry of Environment and Water (MOEW) is the competent authority responsible for the development and implementation of the national waste management policy, including drafting and enforcement of the legislation, strategies, programmes, international projects, as well as regulation of the activities in the public and private sectors. The MOEW performs some of these activities by the Executive Environmental Agency (EEA) and a network of 15 Regional Inspectorates of Environment and Water (RIEW) that are specialized control bodies of the Ministry.

Legislative initiative

The Ministry of Environment and Water is responsible for the development of the national waste management legislation.

Permitting

The Minister of environment and water issues permits for activities with hazardous wastes and for disposal and/or recovery of municipal, construction and industrial waste that does not possess hazardous properties in the cases when the activities are executed on the territory of more than one RIEW. MOEW regulates the order and procedures for issuing of permits and also controls (including methodologically) the functions of the RIEW related to permit issuance.

The MOEW is also the competent authority for issuing of permits for transfrontier shipment of wastes and for implementation of the obligations resulting from the *Basel Convention on Control of Transboundary Movement of Hazardous Wastes and their Disposal.*

With the exception of the cases when Integrated Pollution Prevention and Control (IPPC) permit is required following the procedure of Chapter VII, Section II of the Environmental Protection Act

(EPA), the RIEWs issue permits for collection, transportation, temporary storage, recovery and/or disposal of hazardous waste and for recovery and/or disposal of municipal, construction and industrial waste that does not display hazardous properties. The RIEWs control the compliance with the waste treatment requirements and the implementation of conditions laid down in the permits.

Programmes

The Ministry of Environment and Water develops and introduces for adoption in the Council of Ministers National Waste Management Programme. The Ministry issues guidelines for the requirements for drawing up, for the scope and for the contents of the municipal and company's waste management programmes.

Information and reporting obligations

The MOEW prepares annual report about the waste management activities in the country that is included in the State of the Environment Report.

The Minister of environment and water keeps a register for the issued permits and registration documents for waste as well as for the closed sites and activities.

The EEA of the MOEW performs monitoring tasks and collection of data for the quality of the water, the air, the soils, the radiation and the waste in the country. The Agency provides information necessary for the Ministry's functions by presentation of data and analyses, performs environmental monitoring of waste generators and disposal facilities, carries out laboratory control of waste and maintenance of database for waste. The Agency has established and maintains the National Automated Environmental Monitoring System (NAEMS). The information system "Waste" is an independent sub-system of NAEMS. NAEMS monitors sites generating municipal, construction, industrial and hazardous wastes. In future the environmental monitoring shall include also assessment of past waste contaminations. It is envisaged that the collection of data for waste within the system of MOEW will be directed toward gradual identification, coding and registering of the landfills and enterprises, which constitute significant real or potential environmental risk.

Support of the waste management activities

Annually, purposive funds for construction of facilities and installations for treatment of municipal, wide spread and hazardous wastes as well as for cleaning up and rehabilitation of sites polluted with waste in the past are allocated upon a proposal by the Minister of environment and water through the State Budget Act.

Moreover the MOEW provides funding for the realization of waste management projects through the Enterprise for Management of Environmental Protection Activities (till 31.12.2002 National Environmental Protection Fund) in the form of grants or credits.

The MOEW is responsible institution for elaboration of programme documents for management of the funding from the pre-accession and Structural funds of the European Union and from the Cohesion fund as well as for the preparation, coordination and administration of the whole process of selection of contractors and the management of the project in the field of environment.

Control

The Regional Inspectorates of Environment and Water control the implementation of the waste management legislation. In execution of their obligations, they perform sudden, current and periodical inspections of waste management activities. The RIEWs approve the waste management programmes presented by the persons that produce waste or treat waste and supervise the implementation of these programmes. The RIEWs control the implementation of the waste management programmes adopted by the Municipal Councils for the territory of the respective municipality.

The RIEWs control the waste reports and the information presented by the waste producers, by the persons that carry out recovery and disposal of waste and by the municipal administrations.

Other institutions involved in waste management

The Ministry of Healthcare participates in the development of legal documents in the waste management field and also:

- specifies the requirements for disposal of hazardous hospital waste, medicines whose term of use is expired and narcotic substances;
- specifies and takes part in determination of procedures, standards and methodologies for hazardous waste classification and through the National Centre of Hygiene, Medical Ecology and Nutrition (NCHMEN) participates in the development of the national laboratory system on waste analyses;
- gives opinion on the permits for hazardous waste management activities issued by the Ministry of Environment and Water.

The *Hygienic-Epidemiological Inspections* (HEI) that are the specialized control bodies of the Ministry of Healthcare exercise sanitary control on the hazardous waste disposal activities and give opinion during the issuance of permits by the RIEWs.

The **Ministry of Agriculture and Forestry** issues permits for use of waste in agriculture, incl. sludge from wastewater treatment plants, compost etc. It sets out and controls the fulfilment of the requirement for management of the waste from agriculture, meat-processing and food industry establishes the veterinarian and sanitarian requirements for collection and disposal of animal waste and performs sanitary control.

The **Ministry of Finance** controls the spending of state budget funds allotted for construction of waste management facilities. It also participates in approval and coordination of past waste contaminations projects. The Ministry takes part in coordination of projects funded by EU and international financial institutions.

Customs Agency controls the fulfilment of the requirements for import, export and transit of wastes.

The **Ministry of Economics** controls the trade activities with ferrous and non-ferrous metal waste, issues licenses for these activities and keeps a register of the permits issued.

The **Ministry of Regional Development and Public Works**:

- controls the regional development and the communal facilities at national and regional level.
- participates in development of the technical requirements for waste treatment and disposal facilities.
- takes part in the development of the documents used for submission of information for waste management activities;

- together with MOEW, MAF and MH adopts regulations on the requirements for selection, construction and operation of the sites for construction of waste treatment facilities and installations.

The Ministry of Interior participates in development and implementation of the legislation on the end-of-life vehicles and exercises control over the companies that carry out commercial activities with ferrous and non-ferrous metals.

The **Ministry of Transport and Communications**:

- sets out the conditions and the order for treatment of the household waste generated from air, water and ground transport means entering the country;
- develops the requirements for transportation of dangerous goods including hazardous waste;
- collects, summarizes and submits to MOEW the information for the delivered ship waste;
- controls the illegal dumping of waste from ships into the territorial sea of Republic of Bulgaria.

The **National statistical institute** collects and processes the information about domestic, construction and industrial waste at national level by waste types and quantities, industrial branches, regions etc.

The **Bulgarian Institute of Standardization** organizes and coordinates the development of Bulgarian standards in the waste management field.

The **State Agency of Metrology and Technical Supervision** controls the conformity of the products that after use generate wide spread waste placed on Bulgarian market and for which essential requirements are set pursuant to the Technical Requirements toward the Products Act.

State Agency "Civil Protection" takes part in the development and implementation of the legislation for emergency situations and disasters.

🕮 Obligations of the municipal administrations for the waste management on their territory

The mayors of municipalities organize the management of the waste generated on their territory according to the requirements of the *Waste Management Act* by providing of favourable conditions so that every holder of municipal waste is served by persons that have concluded written contract for rendering of the service following the procedure of the Public Procurement Act.

The municipal mayors are responsible for:

- provision of vessels for storage of municipal waste - containers, bins etc.;
- collection of the municipal waste and its transportation to the landfills or other disposal facilities and installations;
- cleaning of the streets, curbs, alleys, parks etc.;
- selection of site, construction, maintenance, closure and monitoring of the landfills for municipal and construction waste or other facilities and installations for disposal of municipal and construction waste;
- participation in the separate collection of municipal waste including packaging waste by determining the places for placing of the necessary elements of the system for separate collection and sorting of the packaging waste;
- organization and implementation of system for separate collection of used fluorescent lamps and other lamps containing mercury;

- organization of the collection and storage of end-of-life vehicles to temporary storage sites as well as determination of the location and the number of these sites;.
- prevention of illegal waste dumping and creation of illegal dumpsites
- determination of the places for change of used oils and informing the public;
- determination of the places for collection of spent batteries.

The municipal mayor is obliged to specify the location of new site for construction of new waste disposal facility after he has been informed that the capacity of the existing landfill is filling up or the date of operation of the respective facility is expiring.

Legislature

The Municipal Council shall adopt regulations setting out the conditions and procedures for discharge, collection, incl. separate one, transportation, transferring, disposal and recovery of municipal, construction and wide spread wastes on their territory as well as the payment of the local taxes and fees for the respective services.

Programmes

The municipal mayors are obliged to develop and implement waste management programmes for the territory of the respective municipality. The programmes are part of the municipal programmes for environmental protection and are developed, adopted and reported following the order of the Chapter V of the Environmental Protection Act.

The minimal scope of the programmes shall include:

- analysis of the current situation and prognosis for the type, properties and quantities of the waste generated or destined for treatment;
- the targets, the stages and the deadlines for their achievement;
- the methods and the facilities for treatment or safe storage;
- descriptions of the specialized treatment installations, as well as the sites suitable for waste treatment;
- the transport routes of the waste to the treatment installations;
- waste management decisions specific for each individual territory or enterprise;
- financial resources for the implementation of the programme;
- measures for construction of facilities and installation for recovery and disposal of the waste located as near as possible to the source of waste generation by using best available methods and technologies;
- conditioning plans for adapting of the existing waste disposal facilities and installations into compliance with the legal requirements that contains concrete measures and resources and deadlines for their implementation;
- measures for treatment of biodegradable waste in order to reduce their quantities and to prevent their landfilling;
- coordination with other relevant programmes;

- system for reporting and control of the implementation of the programme;
- system for assessment of the results and updating of the programme;
- contact information for the persons responsible for the waste management.

In addition to these requirements, the programmes shall be elaborated in compliance with the "*Guidelines for the scope and contents of the waste management programmes*", approved by the Minister of environment and water. The facilities, installations and sites for treatment of waste shall be reflected in the Regulation of the territory plans. A specimen of the waste management programme shall be presented to RIEWs within a term of one month after its adoption by the Municipal Council.

Financing

The Municipal Council determines the amount of the municipal waste fee within the limits set out by the Local Taxes and Fees Act. The annual amount of the fee is determined by decision of the Municipal Council for each settlement.

The basis for the determination of the amount of the fee is an approved bill of quantities containing information on the needed expenditures for:

- provision for vessels for storage of municipal waste - containers, bins etc.;
- collection of the municipal waste and its transportation to the landfills or other disposal facilities and installations;
- prospecting, design, construction, maintenance, operation closure and monitoring of the landfills for municipal waste or other facilities and installations for disposal of municipal waste;
- cleaning-up of the streets, city squares, green areas, allays, parks and other areas of public use.

Information and reporting

The municipalities shall report the annual waste management activities and the implementation of the programmes not later than the first quarter of the next year. One copy of the report shall be submitted to the respective RIEW.

Control

The mayors of the municipalities or persons authorized by them shall control:

- the collection (including the separate collection), storage, transportation and disposal of municipal and construction waste and the activities that generate these types of waste;
- the landfilling of industrial and hazardous waste and the implementation of the programmes for the management of these types of waste;
- the compliance with other requirements laid down in the municipal regulations.

The municipal mayors shall organize and control, the land restoration of the site and the subsequent monitoring of the closed landfills located on the territory of the respective municipality.

Sanctions

The mayors of the municipalities, or persons authorized by them, have the rights to issue punitive orders and to impose fines and sanctions to natural and legal persons for violations of the punitive provisions of the Waste Management Act. The money from the fines and sanctions for the violations of the provisions of Chapter VI of the WMA are transferred to the budget of the respective municipality in case the punitive orders are issued by the municipal mayors.

3.1.2. Existing problems and constrains in the functioning of the institutions

Administrative capacity

The personnel of the competent authorities is insufficient for the fulfilment of their obligations and responsibilities imposed by the law. This applies to a great extent to RIEWs and the municipal administrations.

Planning, control and administrative procedures

Waste management programmes for the territory of the municipalities

Most of the measures set out in the municipal programmes are not financially secured and they are not implemented within the fixed deadlines. By this way the municipalities are in a difficult position to observe the prescriptions of the RIEW for improvement of the waste collection and the operation of the existing landfills for waste.

Training of the municipal administrations in waste management planning is necessary.

- *Permit issuance*

In a series of cases the competent authorities issue permits without inspecting the site and without having all necessary information for permit issuance.

By the adoption of the WMA it is envisaged that this practice will be stopped. It is explicitly specified that site inspection must be carried out before the issuance of the permit.

Standards

The legislation adopted during the period 1998 – 2003 is not supported by the relevant standards and methodologies for determination of the components and properties of the waste and criteria for acceptance of hazardous waste at landfills for non-hazardous waste. Their gradual adoption during the period of validity of the programme will contribute to more accurate waste classification and will allow landfilling of part of the hazardous waste at landfills for non-hazardous waste.

Financing of the waste management activities

- *Municipal waste fee*

The municipal waste fees determined by the municipalities, are low and do not cover all costs for waste collection, transportation, treatment and/or disposal in case of application of modern technical

standards. In principal, the fees are determined on basis of the current municipal expenditures and do not include the costs for closure of the existing landfills, design of new disposal facilities and installation etc. The majority of the Municipal Councils do not support the increase of the municipal waste fees due to social reasons.

There is no transparency in the determination of the fees nor public control over the spending of the collected funds.

The waste fee is determined proportionally to the tax assessment and the households, trade centres and enterprises are not stimulated at all in waste prevention, separate collection and recovery of the waste.

Part of the waste fees, going to the municipal budgets, are spent for other purposes (health care, education) depending on the current financial state of the municipality.

- *Fees for permit issuance*

The fees for permit issuance are low; they do not account the real amount of work performed by the competent authorities (MOEW, RIEW) and they are not differentiated depending on the type of the permit. The fees do not reflect all expenditures for control, monitoring measurements, periodical on site inspections etc. performed by the competent authorities.

- *State budget*

The purposive funding of municipal projects by the state budget is not directly bound by the objectives and priorities in the waste management field. Improvement of the coordination among the institutions during the endorsement of the projects is needed including elaboration of clear criteria for funding and procedures for control over the realization of the projects.

TRENDS

- The realization of regional initiatives in planning, construction and operation of the municipal waste disposal infrastructure will be of growing importance.
- The high costs for implementation of the modern requirements for collection, recovery and disposal of the waste will require detail planning of the waste collection and disposal activities.

3.2. waste PRODUCERS AND WASTE HOLDERS

The waste generation goes along with all domestic, industrial, commercial, service and other activities.

The obligations of the waste producers are regulated by the Waste Management Act and by the secondary legislation adopted under RHIWEA which is in force till the adoption of new secondary legislation as far as it does not contradict to the WMA.

In addition the municipal administrations through the Regulations on discharge, collection, including separate collection, transportation, transfer, recovery and disposal of municipal, construction and wide spread waste lay down additional requirements that should be observed by the waste producers on the territory of the respective municipality.

3.2.1. Industry

The industry is the major waste producer in the country and the activities of the waste generators from the different industrial branches will be significantly influenced by the legislative amendments and by the higher standards for environmental protection applied towards the waste management activities.

In a number of cases the waste producers from the industry carry out also special activities for collection, storage, transportation, recovery or disposal of waste resulting from their main activity. In this respect the requirements that are applied toward the companies specialized in treatment of waste shall be applied to these waste producers as well.

Obligations and responsibilities

- *General obligations and responsibilities*:

The persons whose activity generates waste or persons who treat waste are obliged to take the necessary measures to ensure:

- as first priority prevention or reduction of the quantity of the generated waste and the hazardous substances content;
- maximal recovery of the waste that can not be prevented through reuse, recycling or energy recovery;
- suitable waste disposal of the waste that can not be recovered.

The waste can be treated:

1. by the waste producer – in own facilities in accordance with the approved plan for industrial activity;

2. by persons that have obtained permit in accordance with the *Waste Management Act* or Integrated Pollution Prevention and Control permit according to the *Environmental Protection Act*.

The waste holders are obliged:

- to comply with the requirements for treatment of the wastes depending on their type, origin and property;
- to maintain the waste treatment facilities in good operational conditions and normal functioning;
- to take all necessarily measures to prevent mixing of hazardous waste with other types of waste or mixing of recoverable with no-recoverable waste;
- to organize safe storage of waste for which no suitable treatment technologies are available;
- in case of hazardous waste - to appoint responsible person and to organize safe management of the hazardous waste;
- to keep waste records;
- on request by the control authorities to admit the inspectors to the technological flow lines generating waste, waste treatment facilities and waste related documentation;
- provide instructions and periodical training of the staff handling hazardous waste;
- to envisage and implement the measures necessary to avoid spreading of pollution after the closure of the sites and the activities as well as of the installation or the facility for waste disposal;
- to provide the necessary financial resources for:

- implementation of the measures envisaged in the waste management programmes;
- the plans for monitoring;
- closure of the waste disposal installations and facilities;
- aftercare monitoring and control.

- to develop plan for action in case of emergency during waste management activities;
- to inform the competent authority for planned changes in the raw materials used and the technological processes that may lead to change in the quantity or the type of the generated waste and their hazardous properties.

The waste holders are responsible for the deterioration of the quality of the environment under the meaning of the *Environmental Protection Act* and for the health and safety of the people exposed to the impact of the wastes.

Information and reporting

The persons, whose activities is related with generation and/or treatment of industrial and/or hazardous waste as well as the persons that carry out treatment of municipal and/or construction waste are obliged to keep record books verified by the RIEWs. After the stop of the operation of all installations and facilities located on a given site the waste producers shall submit the report books to the municipal administrations.

Permits, registrations and licenses

The persons that carry out collection, transportation, temporary storage, recovery and/or disposal of waste must obtain a permit issued following the procedure in the WMA or Integrated Pollution Prevention and Control permit issued in accordance with Chapter VII, Section II of the Environmental Protection Act. Permits are not required for collection, transportation and temporary storage when the waste does not display hazardous properties and for commercial activities with ferrous and non-ferrous metal waste.

For commercial activities with ferrous and non-ferrous metal waste, which does not display hazardous properties license issued by the Minister of economy is required. For the issuance of the license a certification issued by the Director of the RIEW on whose territory the site is located is required.

Programmes

The persons, whose activities generate hazardous waste; industrial non-hazardous waste in total quantity higher than 1 m^3 or 1000 kg per 24h; construction waste in total quantity higher than 10 m^3 per 24h and the persons that place on the market products, which after use generate wide spread waste shall develop and implement waste management programmes. These programmes are prepared for a long-term period, depending on the expected development of the production and other activities, but not shorter than three years.

The annual waste management activities and the implementation of the waste management programmes shall be reported in the first quarter of the next year and a specimen of the programme shall be submitted to the RIEW.

Reimbursement of the costs

The costs for treatment and transportation of the waste shall be born by the waste producers unless otherwise stipulated. When the producers of the waste are unidentified the costs for restoration of the environmental quality shall be covered by the persons that possess the waste until the waste producer is identified.

All costs for restoration of the environmental quality and for the investigation of the actual producers of the waste shall be reimbursed by the actual waste producers.

Delivery and acceptance of waste

The delivery and the acceptance of industrial, construction and hazardous waste shall be carried out only if a contract is concluded.

In a number of cases the waste producers from the industry carry out also special activities for collection, storage, transportation, recovery or disposal of waste resulting from their main activity. In this respect the requirements that are applied toward the companies specialized in treatment of waste shall be applied to these waste producers as well.

Producers and importers of products that after use generate wide spread waste

The persons that place on the market products, which after use generate wide spread waste, are responsible for the separate collection of the waste and for the attainment of the respective targets for recycling and recovery. These obligations may be fulfilled individually, by collective schemes represented by Recovery organizations or by payment of product charges.

In case that the importers and the producers of the respective goods and all their distributors including the persons that sale these goods to the final consumers fulfil their obligations individually they are obliged to take the waste generated as a result of the consumption of the products back at the point of sale or at another suitable place.

EXISTING PROBLEMS AND CONSTRAINS

- Some industrial sectors as energetics, chemical industry and metallurgy produce significant amounts of waste as a result of the raw materials used and/or the technologies applied.
- The lack of hazardous waste disposal facilities necessitates on site storage of considerable quantities, which entails significant expenditures, presents potential risk to the environment and constitutes a danger of industrial accidents.
- In a number of cases there is non-fulfilment of the conditions set in the permits issued by the competent authorities mainly related to the period of time specified for closure and adaptation of the existing facilities and storage sites to the legal requirements.
- The enterprises do not have enough experience in investment planning in the sector.

TRENDS

- The implementation of the legal requirements will entail increase of the expenses of the enterprises for waste treatment.
- It can be expected that as a result of the stricter requirements toward waste disposal facilities and installations a lot of small facilities on the territory of the enterprises will be closed and the share of waste delivered for treatment to external companies will grow up.
- It is expected that the increase of the waste disposal expenditures will force the companies to take stricter measures for waste prevention, reuse, recycling and other forms of waste recovery. The enterprises will make more efforts to minimize the environmental protection costs by introducing new cleaner technologies and by using raw materials leading to generation of less waste quantities as well as finding of the optimum from economic point of view waste treatment methods. In some cases, the high disposal expenses may result in closure of non-efficient manufactures.
- The enforcement of the legislation will also entail higher costs for survey, planning, reporting, monitoring of the waste and training of the personnel.
- The introduction of environmental management systems by application of EMAS and certification procedures according to BDS ISO 14000 shall play important role in assessment of the ecological efficiency of the waste management activities and will provide a mechanism for determination of the measures for waste prevention and minimization.
- The raising of the sanctions and the strengthening of the control over waste producers will result in limitation to the minimum of the possibilities for uncontrolled discard and disposal of waste.
- The industry through its branch chambers and associations will play more important role in the waste management planning on municipal, regional and national level.

3.2.2. Households

The households are the other substantial source of waste, which requires special attention. The households are obliged to pay "municipal waste fee" whose rate is determined per each single service – waste collection and transportation; disposal of the municipal waste on landfills or by other facilities; keeping settlements clean. The annual rate of the fee is determined by a decision of the Municipal Council for each settlement and the households pay it at the time of payment of the immovable property tax.

The citizens are obliged to discharge the waste at sites appointed for this purpose by the municipal regulations and to observe the other conditions and requirements for waste collection and keeping the settlements clean. Fines in the range of 50 to 500 BGN are imposed by the WMA to persons that dump waste on forbidden places.

Centres for buying back of waste for recycling - paper, glass, plastics and metals are operated in the bigger cities of the country. These centres are operated by private companies independently from the municipal waste collection systems. The citizens may deliver the waste separated by them by type and quality to these centres against small payment.

EXISTING PROBLEMS AND CONSTRAINS

- There is public resistance against the raising of the municipal waste fee. This is mainly due to the lack of information about the risks to the environment arising form the improper waste treatment, the lack of transparency and public involvement in the determination of the fees

and also because of the lack of public control over the expenditures for environmental protection.

- The payment of the fee, which is proportional to the tax evaluation of the immovable property, does not encourage the population to make efforts towards waste reduction and separate waste collection.
- The raising of the municipal waste fee is not directly related with improvement of the quality of the services for waste collection and cleaning of the settlements.
- There are significant variations in the amount of the fees imposed in the different municipalities, as well as among the settlements within one municipality, despite the fact that the waste collection and disposal schemes are in principal the same.
- In a number of cases the municipal waste fee is collected in the settlements where the municipality does not provide waste collection and transportation services.
- There is public resistance against construction of new waste disposal facilities (NYMBY syndrome) during the recent years.

TRENDS

- The implementation of the modern legal requirements will lead to increase of the municipal waste fees and the household expenditures respectively as a result of:
    - the stricter requirements toward waste disposal facilities and installations and the resulting expenditures;
    - the higher transport costs resulting from the transition towards regional disposal facilities;
    - the costs for organization of separate waste collection, recovery and disposal of some specific waste streams such as packaging waste, spent batteries, electric and electronic equipment, small chemical waste (packaging from chemical preparations, cosmetics) etc.
- In addition the higher costs for treatment of sludge from municipal waste water treatment plants, including the costs for construction of new treatment plants, will increase the expenditures spend by the households to the sewage and water supply companies.
- The implementation of different separate waste collection schemes will be in direct dependence on the raising of the public awareness and the active participation of the population in the separate collection schemes. This requires more efforts to be made by the local authorities for provision of information for the public about the opportunities for participation in different separate collection schemes. To this end the public should be well informed for the risks and benefits to the environment by the waste management activities.

3.3. Role of the private and the public sector

The legislative amendments during the recent years and the process of economic restructuring created preconditions for development of market for waste management services. Despite the insufficient investments in the environmental protection sector more private companies enter the market of waste collection, transportation, recovery and disposal.

3.3.1. Services provided by the private sector

The private sector providing waste management services consists of about few hundreds companies, but it could be accepted that it is still in initial phase of development.

The investments in the sector are limited in amount and in scope and basically they are related to entering of private companies in waste collection and in recovery of metal scrap and other types of recyclable waste. The recycling of waste is entirely private activity.

During the recent years, basically due to realization of international projects, the number of companies providing qualified consultant services in the field of planning of the waste related activities, environmental assessment and expertise, survey, design and construction of waste treatment facilities is significantly increased.

3.3.2. Public sector

The public participation in the field is limited to the municipal waste collection and disposal systems.

Despite the fact that during the recent years the total number of municipally-owned companies carrying out waste collection and operation of landfills for municipal waste is decreasing the share of these companies in municipal waste services is still of great significance. The participation of the municipalities in joint ventures with private companies is limited, basically due to the existing procedures for public procurement and because of the limited resources of the municipalities for investment.

The municipalities are not always able to provide substantial funding through their own financial means or credit lines. Various municipalities make use of the instrument for granting of credits by EMEPA (former NEPF) for buying of equipment and containers for collection and transportation of municipal waste, while the investments in disposal infrastructure (landfills for waste) are as a result of grants allotted by the state or international donors only. At present, there are no investments by municipalities in facilities for separation and sorting of waste, composting installations etc.

PROBLEMS AND CONSTRAINS FOR THE ACTIVITIES CARRIED OUT BY THE PRIVATE AND THE PUBLIC SECTOR

- The investments in the waste management field, both public and private, are insufficient taking into account the necessity of modernization and substitution of the worn-out equipment.
- Collective systems for fulfilment of the legal obligations of the producers and the importers of products, which after use generate wide spread waste, are not organized.
- The introduction of modern methods and technologies for treatment of waste is slower in comparison to the EU member states.
- The Bulgarian industry servicing the waste management, including manufacturing of installations and facilities for recovery and disposal, specialized equipment for collection and storage and laboratory equipment is poorly developed.
- The exchange of waste within the industry is insufficient.

TRENDS

- The private investments and the attraction of foreign investments in the waste management field will be an important factor for the modernization of the waste management in Bulgaria.
- The involvement of the private sector will go along with the economic growth and will depend on the potential of the municipalities to reimburse all costs for collection, sorting, recovery and/or disposal of the waste.
- The implementation of the legislation adopted during the period 1998 – 2003 and the future amendments in the legal requirements including the improvement of the data for the quantity and the composition of the waste will require significant increase of the investments and the scope of the provided services.
- The realization of regional projects by joining the efforts of several municipalities for construction of common waste treatment infrastructure as well as the participation of the municipalities in joint ventures with Bulgarian or foreign investors for realization of such kind of projects will play important role for the implementation of the measures set in the present programme and for achievement of new higher standards for waste management in the country.

CHAPTER IV. LEGAL FRAMEWORK AND POLICY

4.1. EXISTING LEGAL FRAMEWORK AND POLICY OF THE EUROPEAN UNION

The general framework of an effective waste management administration is laid down by the framework Directive 75/442/EEC on waste and the supplementing Directive 91/689/EEC on hazardous waste. The main principles and requirements set by these two documents are further developed by two types of daughter directives. The first group lays down the requirements for permitting and operation of waste disposal facilities (landfills and incinerators). The other group covers specific groups of waste such as used oils, spent batteries and accumulators, packaging waste, end-of-life vehicles etc.

The main objective of the Community's waste management policy is to provide for high level of environmental protection, without distortion of the functioning of the European common market, as well as to promote the sustainable development. For the achievement of this dual target, the following elements are of significant importance:

- comprehensive and integrated legal framework;
- suitable definition of the waste related terminology;
- suitable rules and principles;
- reliable and comparable data.

The Community Waste Management Strategy dated 1989[3] lays down the principles, goals of the policy and the actions, that the European Commission intents to follow in development of the legislation and other activities in this field. The document should be considered as a declaration of intentions, without binding legally the Commission or the Member States.

The Community Strategy considers waste as pollution source of growing importance. In this respect, the right and well-planned waste management policy could contribute both for the conservation of scanty natural resources and to the environmental protection, thus contributing to the sustainable development.

Taking into account that the waste management is a complex task, consisting of various components, the Strategy is based on the following principles of sustainability:

- "prevention" waste generation have to be reduced and avoided, when possible;
- "producer responsibility" and "polluter pays principle" – persons that produce or contribute to waste generation or pollute the environment shall cover all costs arising from their activities;
- "precautionary" - the potential problems have to be foreseen and avoided as early as possible;
- "proximity" - wastes have to be disposed on the nearest possible site at the place of their generation.

These principles were confirmed by the update of the Strategy in 1996[4], when the waste management hierarchy was further developed and substantiated. The waste prevention should be considered as first priority, followed by the recovery and the last priority is the safe disposal of the

3 Communication from the Commission on a Community Strategy for Waste Management (SEC(89) 934 final of 18.9.1989). Endorsed by the Council in its Resolution of 7 May 1990 (OJ C 122/2, 18.5.1990)

4 Communication from the Commission on the Review of the Community Strategy for Waste Management (COM(96)399 final, 30 July 1996)

waste. For the implementation of this hierarchy, the best solution from environmental protection point of view has to be found, taking into consideration the different economic and social factors.

In regard to the *prevention principle*, the strategy pays special attention to the development and to the implementation of the following measures: promotion of cleaner technologies and products; reduction of the hazardous properties of the waste, incl. introduction of technical standards and as much as possible general rules for limitation of the hazardous substances presence in the products; encouraging of re-use and recycling schemes; proper application of economic instruments, eco-management audit schemes and life cycle analysis; activities for informing the customers and inclusion of the waste management issues in the educational programmes and not least the development of eco-labelling systems.

The waste recovery has to be considered in its three dimensions: re-use, recycling and energy recovery. The reuse of products has to be promoted, when it is reasonable from environmental point of view, because by this means the waste generation may be avoided. When it is environmentally reasonable, priority should be given in favour of material recovery instead of energy recovery.

In the field of the final disposal, special attention shall be paid to the prevention as much as possible of the incineration without energy recovery and the landfilling of waste. The rehabilitation of the dumpsites and landfills stopped of operation is a problem that requires drastic measures at different levels. In accordance with Directive 75/442/EC on waste the Member States shall undertake appropriate measures to establish an integrated and adequate system of waste disposal facilities and installations, which must allow the Community to become self-sufficient in disposal of the waste produced in EC (self-sufficiency principle).

The Strategy raises the issue of producers' responsibility. Considering the life cycle of the products 'from the cradle to the grave', the producers, distributors of materials, traders, consumers and the responsible administrative authorities share specific responsibilities for the waste management. Nevertheless, the role of the producers is considered as dominant, as they make the most important decisions regarding their products and thus in broad extend predetermine the options for management of the waste generated. Therefore the producers can contribute not only to waste prevention via application of appropriate technologies, introduction of materials suitable for recycling or less hazardous materials but also by promoting the products in a manner encouraging their reuse and recovery. Such measures can be marking, labelling, issuance of users' manuals and publishing of appropriate information.

The Strategy confirms the necessity of proper control over the transfrontier shipment of waste under the requirements of the legal framework set out by Regulation (EEC) 259/93. Special attention has to be paid for the achievement of the dual target for ensuring high level of environmental protection without causing distortion to the functioning of the internal European market. Appropriate implementation of the principles of proximity and self-sufficiency is necessary. According to these principles the waste shall be disposed of at one of the nearest suitable facility and the waste generated within the Community shall not be disposed elsewhere.

The strategy pays attention to the instruments that may be used at various levels with a purpose of achieving the targets, namely regulatory and economic instruments, reliable and comparable waste statistics, waste management planning, proper enforcement of the legislation and adequate application of the life cycle assessment and eco-balances methodologies.

The Strategy underlines the need of active participation and inclusion of all economic operators in the achievement of waste management goals, by requiring the participation of the state authorities, the companies, the environmental organizations and the public.

4.2. EXPECTED AMENDMENTS OF THE LEGAL FRAMEWORK AND POLICY OF THE EUROPEAN UNION

The development of the environmental legislation of the European Union, and in particular in the waste management field, is a dynamic process continuing for more than 30 years.

The 6th Community Environment Action Programme[5] (CEAP) sets out the basic principles and targets of the environmental policy of the Community till the year 2010 and also specifies the measures to be taken.

The implementation of the CEAP has to be interpreted in the context of the enlargement of EC and the document specifies the need of undertaking of consistent measures taking into account this perspective. The implementation of the Community's environmental legislation is the major task for the candidate countries and for this purpose they will be supported financially through the pre-accession instruments of the Community.

The CEAP recognizes the natural resources and the waste as one of the four priority fields together with the climate change, nature and biodiversity conservation, environment and human health.

In order to make progress in these areas, the new CEAP is based on five basic approaches:

- ensuring the implementation of the environmental legislation;
- integration of the environmental issues in all other sectors;
- work in close cooperation with the business, consumers, non-governmental organizations and social partners in order to ensure better and more accessible information for the public needed for making of decisions;
- application of complex of instruments in order to ensure maximum efficiency and achievement of good results in implementation of the measures for improvement of the environment.

In the field of waste prevention, the CEAP identifies as major problem the continuing increase of the quantity of the waste generated. On one hand, this is connected with enlargement of the areas needed for construction of waste treatment facilities and on the other hand, the waste management activities include cause various pollutants into air, water and soils. Not applying of methods for recovery and recycling of waste could be considered as a loss of valuable recourses, that may be reclaimed from the wastes and on the other hand, the utilization of the waste leads to decrease of the consumption of natural resources. The CEAP recognizes the necessity of further promotion of the recycling and recovery of the waste.

The main purpose of the 6th CEAP in the waste management field is the economic growth to be in conformity with the limitation of the consumption of natural resources and the minimization of the waste generation. The CEAP requires overall decrease of the waste quantities by improvement of waste prevention activities, better resource utilization and transition to more sustainable consumption and production patterns.

For the waste that are generated yet the CEAP aims to attain the following objectives:

- the waste generated displays minimum hazardous properties and constitute limited risk to the human health and the environment;
- the recovery and especially the recycling is of higher priority;
- the waste amounts requiring final disposal are reduced to the absolute minimum and the waste is safely disposed;

5 6th Environment Action Programme "Our future, our choice"

- the waste is treated in one of the nearest appropriate facility without impairing the efficiency of the treatment operations.

In compliance with the targets set out and in the context of the general strategy for waste prevention and increase of recycling, considerable reduction of the waste going to final disposal and limitation of the quantities of the generated hazardous waste are necessary.

The CEAP takes into consideration that the increased consumption and the raised living standard in the accessing countries probably will be an additional burden to the waste management systems and infrastructure. Therefore besides the improvement of the existing waste management systems, priority shall be given to the investments and initiatives for waste prevention and recycling.

As regards **waste prevention** the measures have to be focused at first place towards the source of generation and they have to include:

- development by the European Commission of targets for minimization of the generation of all waste types that should be attained till 2010;
- promotion of environmentally sound design of products aiming for achievement of sustainable development;
- increasing the public awareness regarding the waste minimization;
- identification of measures for encouraging the waste prevention by promoting the reuse and recovery, prohibition of the use of some substances and materials etc.;
- elaboration of new indicators in the waste management field;
- identification of hazardous substances causing the major problems in the waste streams, encouragement of their replacement with less hazardous substances or manufacturing of alternative products, where it is possible. In case this cannot be achieved, it must be ensured the functioning of closed loops where the producers are responsible for the collection, treatment and recycling of waste in a manner limiting the risks and impacts upon the environment;
- integration of the targets and priorities for waste prevention in the Community's Integrated Product Policy[6] and in the Community's Strategy on Chemicals, with a view of identification and implementation of the possibilities for reduction of the content of harmful substances, extension of the product life cycle, promotion of easily recyclable products etc.;
- encouragement of application of economic instruments, such as eco-fees for products and processes characterized by intensive resource consumption and waste generation.
- shifting of the responsibility to the producers of products that generate waste in case this is efficient;
- influence on the consumption pattern with a purpose of increasing the preferences for products and processes that lead to less waste generation for example though introduction of eco-labelling, conduction of information campaigns etc.
- performance of a study with a purpose of identifying the most problematic and hazardous waste streams generated by various industrial sectors (mining, energy production, machinery, construction, agriculture etc.) and cooperation with these sectors in order to find out proper way for minimization and elimination of these waste streams.

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6 Communication from the Commission to the Council and the European Parliament on Integrated Product Policy (IPP) COM(2003) 302 final / 18.6.2003

- funding of research and development of cleaner technologies and promotion of the application of best available technologies and practices.

The Community approach in the field of recycling continues to be focused on:

- implementation of measures aiming to ensure the separation of waste at the source of generation, collection and recycling of priority waste streams;
- further development of the producers' responsibility principle;
- development and introduction of technologies for environmentally sound recycling and treatment of waste.

As a result of the gained experience in the enforcement of the legislation, the CEAP sets out the need of elaboration of complete programme for promotion of the waste recycling in the Community. The objective is the waste to be recovered and recycled to such levels to which this is useful i.e. to the degree to which the recycling and recovery operations still provide benefits to the environment and this is technically and economically feasible.

The programme envisages the development and the update of the following legislation:

- the sewage sludge directive;
- construction and demolition waste;
- the biodegradable waste;
- packaging and packaging waste;
- spent batteries and accumulators;
- transfrontier shipment of waste
- clarification of the issues regarding the distinguishing of waste and non-waste;
- development of criteria for review of the Annexes IIA and IIB of the framework Directive 75/442/EEC on waste (the recovery and disposal operations).

The EU legislation and policy in the waste management field should not be considered in an isolated manner, but in the context of the general environmental policy of EU. In this respect, the requirements in the field of the industrial pollution, prevention of accidents, environmental responsibility, access to information etc. should also be taken into account.

4.3. NATIONAL LEGAL FRAMEWORK AND POLICY

By the adoption of the Reduction of the Harmful Impact of Waste upon the Environment Act (promulgated in State Gazette No 86 from 30.09.1997) (RHIWEA) in 1997 appropriate conditions for legal regulation of the waste management activities in the country was set out. By the implementation of this Act and the National Waste Management Programme for the period 1998 – 2002 a set of secondary legislation acts in the field of waste classification, requirements for sites and facilities for waste treatment and disposal, requirements for specific waste streams were adopted.

Taking into consideration the problems met during the implementation of the legislation in the preceding years and also the objectives for adoption of the European environmental protection standards, in January 2003, the National Assembly (the Parliament) adopted Waste Management Act. By keeping the basic principles of the RHIWEA, the new act lays down the general requirements for protection of the environment and human health in relation to the generation, storage, collection, transportation, recovery and disposal of waste. The Act regulates the environmentally sound waste

management as a set of rights, obligations, decisions, activities and operations related to waste generation and treatment as well as the different forms of control.

The Act differentiates the requirements towards the different by type and origin categories of waste. For this purpose the following classes of waste are specified – municipal, industrial, construction and hazardous waste. At the same time the Act regulates the main conditions for waste collection, storage, transportation, recovery and disposal.

Waste management hierarchy is laid down, which sets:

- as first priority – waste prevention,
- as second priority – recovery of waste by means of recycling, re-use and/or extraction of raw materials or use of waste as a source of energy;
- as third priority – final disposal by landfilling or incineration of the waste, for which it that is impossible to be prevented and/or recovered.

By the introduction of the waste management hierarchy the obligations for utilization of the waste as alternative raw material and energy source are laid down thus contributing to preservation of primary natural resources.

Prohibitions of abandonment, uncontrolled dumping, burning or other form of uncontrolled disposal of waste are introduced. The waste holders are obliged to arrange the recovery and/or disposal of the waste by themselves according to the law or to submit the waste for collection, transportation, recovery or disposal to persons that have the right to carry out the respective waste activities.

The general requirements for planning of the waste management activities in the country are set out including the requirements for the objectives, scope and the procedures for adoption of the waste management programmes.

The WMA lays down the legal grounds for setting quantitative targets for recovery of waste generated after the use of specific products. The costs for final disposal of these wastes should be covered by the waste holders or by the producers of the products. In this respect the principles "polluter pays" and "producer responsibilities" are fully fulfilled. This is carried out by payment of product charges for putting on the market of products that after use generate wide spread waste or by direct fulfilment of the obligations of the importers and producers of such products for collection and recovery of the waste. The producers and the importers may fulfil these obligations either individually or joining a collective scheme thus setting conditions for optimization of the waste collection and recovery and of the necessary costs for these activities:

- for the cases of individual fulfilment, obligations for the distributors of the products to take the waste generated after the consumption of the products back at the place of selling are laid down;
- for the cases of collective fulfilment the targets are attained by Recovery Organization, for which it is envisaged to be non-profit company registered under the Commercial Act.

The Act determines also the cases when a permit for waste management activities is required, the competent authorities for permit issuance, the time limits, procedures and the conditions for application for permit and for taking of decision for permit issuance. With a view of alleviating the burden of the permit regimes a registration regime for waste collection, transportation and temporary storage activities and a license regime for commercial activities with ferrous and non-ferrous metals are set out. A procedure for issuance of permit to Recovery Organization is introduced with a purpose of ensuring the fulfilment of the obligations for separate collection, recycling, recovery and disposal of wide spread wastes by these organizations.

The WMA determines the responsibilities of the Ministry of Environment and Water, the Regional Inspectorates of Environment and Water, the other state institutions and the municipal mayors in relation to the control over the products that after use generate wide spread waste and over the activities, facilities and installations for treatment of waste.

The Act lays down detailed administrative punitive provisions for non-fulfilment of the Act and the secondary legislation by natural, legal and official persons.

The requirements of the legal acts regarding the facilities and installations for treatment of waste, reporting, classification, import, export and transit of waste as well as for management of wide spread waste are presented in Annex 1.

4.4. International agreements and conventions

The ***Basel Convention on Control of transboundary movement of hazardous waste and their disposal*** is ratified by Republic of Bulgaria by Law adopted by the 37-th National Assembly on the 18th of January 1996 (promulgated in State Gazette No 8 from 1996). Additionally the amendments of the Convention were ratified by Law (promulgated in State Gazette No 113 from 1999).

Republic of Bulgaria takes part regularly in the meetings of the Open-ended Working Group for the implementation of the Convention and in the Conferences of the Parties.

5. MAIN PRINCIPLES AND OBJECTIVES OF THE PROGRAMME

The National Waste Management Programme (NWMP) has for an objective to set out long term strategy for sustainable waste management and the framework for decision making in compliance with the legislation and the policy of the European Union.

This chapter describes the objectives that the National Programme sets for the period 2003 – 2007 based on the adopted principles for waste management that are adapted to the national conditions.

The main objective of the National Waste Management Programme is to contribute for sustainable development by establishment of integrated framework for waste management, which will lead to:

- reduction and limitation of the harmful impact upon the environment caused by the waste generated;
- better resource efficiency
- maximum producer responsibility;
- encouragement of the investments and the waste management activities.

5.1. Principles

The programme is based on the following waste management principles:

1. Sustainable development (Sixth Community Environment Action Programme)

The sustainable development is defined as a model for social and structural economic transformations that optimizes the present economic and social benefits without compromising the potential for their existence in future. The main purpose of the sustainable development is to achieve judicious and just distribution of the level of economic wealth for many generations.

Sustainable development in the waste management field means use of the natural resources without destroying or harming them and by a manner that does not restrict the possibilities for their use by the future generations. This requires maximum waste prevention and recovery and recycling of secondary materials.

2. Waste prevention principle (Directive 75/442/EEC on waste – Article 3 (1), Sixth Community Environment Action Programme)

The waste prevention principle involves limitation of the use of natural resources to the minimum and reduction of the quantity and/or hazardousness of the waste generated. At the same time the achievement of lower levels of waste generation would decrease the harmful impact upon the environment resulting from the waste disposal.

The waste prevention is a principle that should be applied both in the households and in the industry by introduction of cleaner technologies limiting the negative impact of the waste at the source of generation.

3. Precautionary principle (declaration from the United Nations Conference on Environment and Development, 1992, Rio de Janeiro)

The precautionary principle is one of the principles that are developed in order to assist the efforts for achievement of sustainable development. It focuses the attention to the foreseeing and

avoidance of the potential problems from waste activities thus assisting the elimination of the risk to the environment and human health.

The UN Conference on the Environment and Development in its Declaration of Rio de Janeiro defines this principle as follows: Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation". The principle includes taking of preventive measures for avoidance of a future degradation of the environment and human health even if enough scientific knowledge for taking of preventive measures is not available.

4. Self-sufficiency principle in waste management (Directive 75/442/EEC on waste – Art. 5)

The proximity principle requires the waste to be disposed as near as possible to the place of their generation. This principle should be taken into consideration in construction of a system for management of the waste at regional, national and international level. It aims at limiting the harmful impact upon the environment caused by the waste transportation. The general objective of the proximity principle is self-sufficiency in waste management at local, national and European level to be achieved to the greatest possible extent.

The implementation of the principle depends on the type and the quantity of the waste, the modes of transportation and on the potential impact of the treatment methods upon the environment. The balance between the proximity principle and the improvement of the economic indicators by increasing the capacity of the waste treatment facilities should be taken into consideration. Due to this fact in case this is economically efficient the specialized waste disposal and recovery facilities may be located at a long distance from the place of waste generation.

5. Waste management hierarchy (Directive 75/442/EEC on waste, Strategy for waste management, 1996)

The hierarchy formulated by the Common Strategy for Waste Management of the EU from 1996 describes the priority sequence of operations and waste related activities as follows:

1.*Waste prevention* by reduction of the quantities and the hazardous substances content in the waste generated.

2. *Reuse / Recycling / Recovery* by means of:

- re-use – use of products or objects many times for the same or other purpose;
- recycling – processing of waste and their utilization as raw materials for the production of the same or other products;
- recovery – by application of the methods of composting, energy recovery or other technologies;

3. Disposal by landfilling or incineration of waste without energy recovery, in case no other solution could be found.

The purpose of the hierarchy is to present a model of integrated waste management approach and the implementation of the hierarchy following this sequence will contribute to establishment of sustainable waste management policy. Up to now in Bulgaria close attention was paid to the landfilling of waste. The attainment of good results in waste management during the period of validity of the programme entails shifting of the emphasis towards prevention, re-use, recycling and recovery of the waste.

The waste management hierarchy should be considered in relation to the other principles and in particular to the application of the "best environmental practices".

6. Best available technology not involving excessive costs (Directive 75/442/EEC on waste)

The best available technology not involving excessive costs principle (BATNEEC) is a consultative process for decision making that takes into account the relative advantages of the different waste management options having regard to the protection of the environment at a reasonable price. The waste management hierarchy gives the theoretical framework that can be used as a guideline in assessment of the different options. BATNEEC is a solution (or combination of solutions) that for certain objectives and in certain circumstances gives the greatest benefits or endangers to the less degree the environment both in short and long term aspect.

Despite the fact that it is useful the hierarchy to be the general objective of the waste management policy its implementation should be juxtaposed with the BATNEEC principle taking into consideration the existing circumstances. The waste management hierarchy is not always the best way for achieving sustainable management of the different types of waste since the waste producers wish to recover or dispose the waste by the most economically effective manner. Therefore the BATNEEC will be different for each specific waste stream depending on the concrete circumstances.

7. Full producers responsibility (Directive 75/442/EEC on waste Art. 15)

"Producer responsibility"

Taking into consideration the life cycle of a given product from its production till the end of its useful life it may be seen that the producer of the product plays dominant role because the decisions that he makes for the design and for the composition of the respective article predetermine the potential of the product to generate wastes and the characteristics of their subsequent management.

Due to this fact in conformity with this principle the producers of products should take the responsibility for:

- prevention and minimization of the waste generated from the production of their products;
- design and development of products that are suitable for recycling and do not contain materials that endanger the environment.
- development of markets for reuse and recycling of the waste generated after the consumption of the goods placed on the market.

"Polluter pays"

The "polluter pays" principle requires the waste producers to take the responsibility for their waste instead of waiting the society to bear the burden of the waste management and to pay the costs for waste treatment and disposal. The potential costs for protection of the environment and human health related to the waste generation and treatment should be taken into account in determination of the price of the products and the amount of the waste management charges.

8. Integrated waste management (Sixth Community Environment Action Programme)

The integrated waste management requires decision making and application of clearly defined quantitative targets within the framework of a system consisting of legal, technical, organizational and economic measures, identified sources of resources and determined responsibilities of all participants that fulfil these targets.

The integrated management combines all the rest principles of the waste management policy. It guarantees interaction and optimal combination of the different methods and approaches with a purpose of achieving economically and environmentally effective waste management.

9. Involvement of the public

The involvement of the public in the all-round process of changes in the waste management sector is of great significance. The population is a main participator in the waste management process because it is continual waste generator so it should be informed about the impact on the environment caused by the waste disposal as well as about the possibilities and responsibilities for waste prevention and recovery.

The public consultations on waste management projects is also of great significance because on the one hand these procedures inform the population and on the other hand this is an opportunity the public opinion on waste management issues to be taken into consideration.

5.2. CONSTRAINS

For the determination of the objectives of the National Waste Management Programme and the related Action Plan it is important the specific national conditions and constrains to be taken into consideration.

Enforcement of the legislation

The main constrain is that an effective system for practical implementation, control and monitoring of the legislation in force corresponding to EU requirements have to be introduced.

Time limits for the realization of the changes

The plans for development of the waste management system that should be in full compliance with the requirements of the European legislation are bound by the time framework for accession of Republic of Bulgaria to EU. The achievement of good results within a short term is a challenge for our country as well as for the other states applying for EU membership.

Financial constrains

The implementation of environmentally sound waste management system will require significant investments and will contribute to rising of the costs for waste recovery and disposal in the near future.

The implementation of the "polluter pays" principle entails increasing of the fees for collection and treatment of the waste paid by the waste producers. The low income of the population especially in sparsely populated areas is a limiting factor. The municipal waste fees should ensure rendering of quality waste collection and disposal services and on the other hand these fees should be affordable for the population.

Data availability

The effective planning of a waste management system requires availability of sufficient and reliable data for the quantity and the type of the waste generated which will allow making of optimal management decisions.

Involvement of the public

The process of change and transition to a system, which is in full compliance with the requirements of EU, necessitates the adoption of the relevant principles by the population and by all participants in the waste management process.

The changes in waste management always lead to arousing of opposition by specific groups of the society. The public opinion may turn out to be an obstacle for the implementation of modern waste management practices for instance by opposition against the construction of new disposal facilities or by not taking part in the systems for separate collection of waste. Due to this fact it is necessary consultations with all participants in the waste management system to be hold during all stages of the waste management process and special attention should be paid to the public information campaigns.

5.3. MAIN OBJECTIVES

The identification of "strategic targets" for the future waste management is done on the basis of the analysis of the existing problems and constrains, the national conditions and taking into account the requirements for compliance with the EU legislation. The present NWMP is directed towards:

- setting out of a clear framework for the participants in the waste management process, which shall support the local authorities and the industry in their plans for future development of the waste management practices;
- ensuring the development of local and regional waste management programmes and attracting of private investments in the sector;
- setting up of a framework for decision making and policy regarding the future waste management in compliance with the EU requirements.

The National programme sets the following 11 strategic targets for management of the waste for the period 2003 – 2007:

1. Prevention and minimization of the waste generated
2. Increase of the quantity of the waste recycled and recovered
3. Improvement of the organization for separation, temporary storage, collection and transportation of the waste
4. Environmentally sound waste disposal
5. Elimination and minimization of the risk resulting from the past waste contaminations
6. Legal regulation of the waste management and acceleration of the implementation of the legislation and policy in the waste management field
7. Provision of sufficient and reliable data for the waste
8. Strengthening of the administrative capacity of the institutions responsible for the management of the waste in the country
9. Increase of the investments in the sector and implementation of the principles "polluter pays" and "producer responsibility" in the integrated waste management
10. Involvement of the public
11. Management of specific waste streams in compliance with the EU requirements

The priorities for attainment of the strategic targets are described in this part of the National programme. The indicators for achievement of the targets of the programme are presented in Annex 2.

5.3.1. Prevention and minimization of the waste generation

The prevention of the waste generation is one of the main objectives of the NWMP. It requires using to the maximum degree of the potentiality for minimization of the quantity of the waste generated.

At the same time it should be taken into account that the reduction of the quantity of the waste generated is a real challenge under the conditions of expected economic growth. The achievement of significant results in this direction will require continuous efforts that can not be limited within the period of validity of the present programme.

The programme envisages that the following results for the different categories shall be achieved till 2007:

- the average level of waste generated per inhabitant should not exceed 400 kg/capita/year;
- stabilization of the industrial waste quantity per unit gross domestic product (GDP) to the levels of 2001 taking into account the expected growth of the industrial production;
- reduction of the generated hazardous waste quantities in comparison with the quantities from 2001.

5.3.1.1. Regulation and promotion of the waste prevention

The current Bulgarian legislation establishes appropriate base for waste prevention so its implementation is of prime importance. As a first step the following measures shall be used as an effective mean for promotion of the waste prevention:

- implementation of requirements for environmental control such as:
  - implementation of the requirements of the Directive on integrated pollution prevention and control (IPPC) by the large industrial enterprises;
  - encouragement of the application of "cleaner" technologies;
  - introduction of eco-management and audit schemes in accordance with Regulation (EC) No 761/2001 allowing voluntary participation by organizations in a Community eco-management and audit scheme (EMAS) and BDS EN ISO 14001 by installations that are potential sources of pollution.
- implementation of "producer responsibility" principle:
  - encouraging of "life cycle" analysis during the stage of design of the products according to ISO 14 040;
  - introduction of Regulation (EEC) 92/880 on Community eco-label award scheme.

These measures are closely related to the implementation of the Environmental Protection Act and the secondary legislation implementing this Act.

5.3.1.2. Optimal application of economic instruments for promoting the waste prevention

The increase of the waste management costs is an incentive to minimization of the quantities of the waste generated so the efforts of the executive power will be concentrated on the following directions:

- consideration of the opportunities and of the necessity for introduction of additional fees for waste generation and waste disposal that shall offer an incentive to waste prevention;

- taking into account the quantities of the waste generated in determination of the amount of the fees paid by the households and the industry;
- consideration of the opportunities for introduction of tax concessions for waste prevention and minimization;
- adoption and implementation of specific measures for reduction of the waste from products whose term of appropriate use is expired.

5.3.1.3. Rising of the environmental awareness and consultations with the stakeholders taking part in the waste management process about the waste prevention

This priority requires suitable measures for increasing the knowledgeability of:

- the traders and the distributors of products, the consumers and the other waste generators regarding the potential opportunities and the benefits of waste prevention and minimization;
- producers for the possibilities and techniques for waste prevention and minimization.

5.3.1.4. Reduction of the hazardous substances content in the waste

The reduction of the hazardous properties of the waste is of important significance and could limit the risks to the environment and human health arising by the storage, transportation, recovery and disposal of the waste.

Special attention should be paid to the reduction of the heavy metal content in the waste (sludge from household and industrial wastewater treatment plants, metallurgy, treatment of metals etc.) and to the large industrial waste producers.

5.3.1.5. Reduction of the hazardous waste quantities in the municipal waste flow

The introduction of systems for collection of hazardous municipal waste (such as batteries, accumulators, fluorescent lamps, light-weight chemical waste, medicine whose term of appropriate use is expired etc.) will reduce the total hazardous substances quantity contained in the municipal waste flow. By this manner the risks arising from the municipal waste disposal facilities could be limited.

5.3.2. Increase of the quantity recycled and recovered waste

The increase of the quantity recycled and recovered waste is one of the main objectives of the NWMP. This necessitates the recycling/recovery to be feasible from technical point of view, the additional costs for recovery to be at the same rate or lower comparing to the other disposal methods as well as the existence of a market for the materials and energy obtained. The material recycling takes priority over the energy recovery.

The rising of the costs for waste disposal during the period of validity of the NWMP as a result of the introduction of stricter legal requirements will encourage the waste recycling and recovery operations as a whole.

Setting of quantitative targets for recycling and recovery of priority waste streams as packaging waste, used oils, lead-acid accumulators and construction and demolition waste will be a practical measure for enforcement the waste recycling/recovery.

The opportunities for increasing the quantities of the recycled industrial waste including by increasing the exchange of waste among the industrial enterprises should be taken as much as possible.

The importation of waste for recovery in the country should not impede the establishment of systems for separate collection and attainment of the targets for recycling and recovery of wide spread waste as well as it should not hinder the implementation of the ban for landfilling of specific wastes.

Till the date of entering into force of the treaty for accession of Republic of Bulgaria to European Union the importation of waste destined for recovery will be prohibited in case they are composed of materials for which the targets for recovery and recycling of packaging and other wide spread waste are not achieved. The importation of used tyres also will be prohibited in case the operator of the facility/installation has recovered less waste quantity from Bulgarian origin during the preceding year comparing to the waste quantity imported for recovery in the same facility/installation.

Within the term of validity of the present programme, the importation of waste destined for recovery, for which ban for landfilling is in force, will be prohibited in case the operator has recovered less waste quantity from Bulgarian origin during the preceding year comparing to the waste quantity imported for recovery in the same facility.

5.3.2.1. Establishment of requirements for recycling and recovery of waste

The legislation is the ground for introduction and promotion of the waste recycling and recovery. The current Bulgarian legislation is harmonized to a great extent to the EU legislation and its development will continue in the future in this direction.

In short term aspect special attention shall be paid to the enforcement of the current legislation and afterwards measures for introduction of additional incentives for the waste recycling and recovery companies will be taken by using the funds raised from the product charges. On the basis of the practical results achieved during the next years, the possibility for prohibition of the landfilling of specific types of waste suitable for recycling (such as used tyres, wood waste etc.) shall be considered carefully.

5.3.2.2. Introduction of systems for separate collection with a purpose of recovery and recycling of waste

The introduction of separate collection at the source of waste generation will contribute to increase of the quantities of the waste fractions collected.

The implementation of schemes for separate collection will be organized mainly on the basis of the “producer responsibility” principle and the producers and importers of goods that after use generate wide spread waste shall cover the costs for that.

The municipalities are responsible for organization of separate collection of municipal waste including packaging waste as they should determine the places for placement of the necessary elements of the system for separate collection and sorting of packaging waste.

Priority will take the introduction of schemes for separate collection and recycling of the following groups of waste:

- packaging waste and other similar municipal waste suitable for recycling (waste paper and paperboard, plastics, metals etc.);
- wastes form offices, administrative buildings and establishments;
- biodegradable waste from households and the catering establishments;

- bulky waste;
- construction and demolition waste;
- used tyres
- end-of-life vehicles;
- wide spread hazardous waste like waste oils, spent batteries and accumulators, fluorescent lamps etc.

Setting of targets for collection, recycling and recovery of some wide spread waste is envisaged. The responsibility for achievement of these targets shall be taken by the producers and importers of the respective goods placed on the market of Republic of Bulgaria.

Product charges, voluntary deposit systems, fees managed by the industry and other measures shall be applied as economic instruments for promoting the recycling and recovery of the waste. The decisions for application of economic instruments will be made after consultations with the industrial sectors concerned. For the period of validity of the programme the government will continue to encourage the establishment of voluntary deposit systems that contribute to the increase of the percentage of reuse and recycling.

The measures envisaged in the NWMP should promote also the increase of the quantities and the types of waste collected with a purpose of recovery and recycling. This will require gradual enlargement and development of the systems for collection of different secondary raw materials and inclusion in the separate collection of additional waste materials and fractions. Taking of measures in order to increase the quality of the materials collected by the side of the companies that carry out activities with waste is a necessary condition for achievement of higher levels of waste recycling.

5.3.2.3. Establishment of stable, long term markets for the materials obtained from waste recycling

The increase of the costs for disposal of the waste is an incentive for waste recycling and minimization. For the enlargement of the market for the materials obtained from waste recycling it is necessary:

- application of tax concessions and other economic instruments for encouraging the waste recycling and recovery;
- construction of new facilities for recycling of waste;
- encouragement of the introduction of new technologies in the field of waste reuse and recycling;
- encouragement of the placing on the market of goods produced from waste materials.

The export of wastes for recycling also should be developed in case their recovery in the country and the construction of the respective new capacity is not justifiable. This requires fulfilment of the procedures for export of waste for recycling set in the legislation. The costs for collection, separation and transportation should not impede the export of waste.

At the same time by increasing the costs for waste disposal the possibilities for waste recycling will become more attractive which presuppose increase of the investments in the recycling industry.

The funds raised from the product charges for wide spread wastes shall be used mainly for supporting the separate collection and recycling of these wastes. In addition, an opportunities for funding of construction of additional capacity for recovery will be offered by the *Enterprise for*

Management of Environmental Protection Activities, which will allow the establishment of a modern infrastructure for recycling of waste at national level. The funds will be directed mainly toward the sectors in which the existing capacity is not sufficient for recycling and recovery of the waste collected in the country. Priority attention shall be paid to recycling of hazardous waste, construction and demolition waste, used oils, biodegradable waste, packaging waste, end-of-life vehicles, batteries and accumulators.

Another important aspect is the adaptation of the existing installations for recycling/recovery into compliance with the requirements of the environmental legislation that regulates the air and water quality, chemical substances, environmental safety, industrial pollution and control etc. during the period of implementation of the Programme.

5.3.2.4. Information campaigns for the potential possibilities and benefits of waste recycling and recovery

The campaigns for rising of the public awareness and consultations with the stakeholders taking part in the waste management process will contribute to understanding of the potential possibilities and benefits to the environment resulting from the waste recycling and recovery.

The government will support the dialogue with the respective economic operators, academic circles, NGO and the general public for introduction and enlargement of the separate collection systems.

5.3.2.5. Increase of the quantity of the energy recovered during waste incineration

During the recent years the advantages and disadvantages of the waste incineration with energy recovery is becoming widely discussed topic. Despite the potential risks the utilization of waste as alternative fuels and/or their incineration with energy recovery may be one applicable option with real benefits to the environment and the national economy.

During the period of validity of the NWMP it should be ensured that the incineration of waste is carried out only in installations that are in compliance with the legal requirements and thus guaranteeing high level of environmental protection. The heat should be recovered as much as possible. Taking into account the fact that the present levels of utilization of waste as energy source are insignificant initiatives and investments in this field will be supported. In that respect the co-incineration of waste in existing cement kilns will be applicable option for energy recovery during the next few years.

Additional efforts shall be directed towards attainment of high levels of recovery of wood waste from wood processing and furniture industry and similar waste form paper industry. The wastes with high caloric value that are not suitable for recycling shall be destined for incineration with energy recovery.

5.3.3. Improvement of the organization for separation, temporary storage, collection and transportation of the waste

Despite the efforts put forth during the recent years the overall condition of the systems for collection, separation, storage and transportation of waste are not at the necessary level. Establishment of companies with municipal partnership for waste collection and transportation as well as joining of the efforts of several municipalities with a purpose of increasing the investments and optimization of the activities in this field are still not actively applied options. Carrying out of collection and transportation of waste on free-market principle and providing of rival conditions among larger number of economic

operators by the public procurement procedures will contribute to achievement of new high-quality services. Having in mind the provisions of the WMA, that the municipal mayors are obliged to ensure that every holder of municipal waste is served by persons who has concluded contract for rendering of services following to the procedures of the Public Procurement Act, all activities by the side of the municipal administrations in this direction will be of great importance.

The introduction of legal provisions and standards regulating the separation of waste at the place of their generation is of primary significance in order to guarantee the practical implementation of the separate collection and the proper temporary storage.

5.3.3.1. Development and implementation of systems for collection of hazardous waste

According to the national legislation currently in force and the requirements of Art. 2 (2),(3) and (4) of Directive 91/689/EEC on hazardous waste and Art. 5 (4) of Directive 1999/31/EC on landfill of waste, mixing of hazardous and non-hazardous waste shall not be allowed during all stages of management of the waste. This necessitates provision of conditions for separate collection and storage of the waste at the place of their generation and establishment of adequate systems for collection of hazardous waste.

In short term aspect the emphasis will be laid upon the implementation of the legislation currently in force that regulates the packing, marking, storage and transportation of hazardous waste.

The necessity of substantial improvement of the existing practices for management of wide spread hazardous waste such as lead-acid accumulators, used oils, fluorescent lamps and end-of-life vehicles is taken into consideration. The conditions for their collection, storage and treatment should be improved significantly so that the present technical standards are achieved. For this purpose the competent authorities shall reassess the permits for collection and subsequent treatment of hazardous waste already issued and they shall not prolong the terms of validity of the permits in case there are no compliance with the technical standards. The purpose of this reassessment is to guarantee that every person that has obtained permit has the necessary qualitative technical equipment, transport means and qualified personnel that allows him to collect and treat the waste without harm to the human health and environment.

In middle-term aspect it is necessary that efforts are put forth towards providing for appropriate logistics for the centralized disposal facility by establishing effective waste collection system composed of transfer stations.

5.3.3.2. Development and implementation of modern multifunctional systems for collection and transportation of municipal waste

The enlargement of the territorial scope of the municipal systems for organized collection and transportation of waste and the inclusion of the smaller settlements is a basic task of the national waste management policy. The development of these systems will be realized simultaneously with the introduction of systems for separate collection.

The systems for collection of municipal waste will be developed depending on the population density, the waste quantities generated and the plans for development of the infrastructure. The efforts of the municipal administrations should be directed towards:

- covering of all settlements under the waste collection and transportation systems;
- provision of modern containers for waste collection (including separate collection) and transport means;

- optimization of the frequency and the routs for collection and transportation of municipal waste;
- introduction of practices and systems for separation of recyclable materials, biodegradable waste, bulky waste and hazardous waste;
- construction of public centres for management of waste, centres for acceptance of waste and temporary storage sites;
- informing of the general public.

The compliance of the municipal waste collection systems with the requirements of the present Programme will be condition for granting of funds from the state budget for realization of waste management projects.

5.3.4. Environmentally sound waste disposal

The waste disposal operations should be carried out without risk to the human health and to the environment. By the moment of the elaboration of the Programme the landfilling of waste is the main method for waste disposal in the country. This necessitates all existing landfills for waste and the other installations for waste disposal to be adapted into compliance with the legal requirements or to be closed and replaced by new installations and facilities.

The present part of the NWMP sets out the framework for making of decisions for the future planning, construction of infrastructure for waste disposal in the country and for management of the disposal activities in compliance with the practices and the standards adopted in EU. The waste disposal operations should be considered in the context of the general national waste management and environmental protection policy. In this regard the Programme sets out the framework for planning by the side of the municipal administrations, the operators of disposal facilities and the waste holders. As a result of the implementation of the Programme it is expected that the risks to the human health and the environment arising from the landfilling and incineration of waste shall be eliminated and limited to the maximal degree under an affordable for the society costs.

The implementation of the priorities is closely connected with the harmonization of the national legislation with the requirements of Directive1999/31/EC on landfill of waste and Directive 2000/76/EC on incineration of waste, which will be ensured by the adoption of the secondary legislation under the Waste Management Act. By the proposed amendments it will be ensured:

- fixing of terms for adapting of the facilities for landfilling and incineration of waste into compliance with the legal requirements;
- introduction of clear procedure for making applications to the competent authorities (MOEW and RIEW) for issuance of permit for operation of disposal facilities;
- introduction of requirements and quantitative targets for reduction of the biodegradable waste;
- amendment of the respective municipal Regulations on collection, storage and transportation of municipal and construction waste and the respective municipal programmes with a purpose of achieving compliance with the requirements and the objectives of the national legislation;
- adaptation of the Bulgarian standards (BDS) for sampling, determination of the properties of the waste, indicators for leaching etc. with the international (ISO) and European (EN) standards currently in force in regard to the monitoring of the landfills and the implementation of the waste acceptance criteria at different classes of landfills;

- that by the determination of the rules for funding of projects through EMEPA and the state budget a requirement shall be laid down that the funding should be carried out in conformity with the Plan for Implementation of Directive 1999/31/EC on landfill of waste and the National Waste Management Programme (2003 – 2007).

For the elaboration of the present part of the NWMP the measures envisaged in the *Plan for implementation of Directive 1999/31/EC on landfill of waste* adopted in 2003 have been taken into account.

5.3.4.1. Adaptation into compliance with the legal requirements or closure of the existing waste disposal facilities

Currently considerable part of the existing landfills and incinerators do not fulfil the requirements of the national and the European legislation. Because of the potential risk from the existing facilities it is a matter of high priority these facilities to be rehabilitated with purpose of ensuring their future operation or new facilities to be constructed respectively. The enforcement of the legislation upon the existing facilities will be a matter of high priority. It is envisaged by the Programme that:

- the operators of waste disposal facilities shall be obliged to prepare and present for approval by the competent authorities conditioning plans for adapting of their facilities into compliance with the legal requirements or their closure;
- the operation of the existing landfills for waste after 31.12.2004 will be allowed only if conditioning plans are presented;
- stop the operation, closure and/or adapting into compliance till 16.07.2009 of all existing landfills for waste that do not meet the legal requirements;
- stop the operation, closure and/or adapting into compliance till 31.09.2005 of all existing incinerators that do not meet the legal requirements in force;

The construction of new regional landfills for municipal waste will allow the operation of the existing 663 landfills to be stopped by 16.07.2009. The deadlines for stopping the operation of each facility coincide with the deadlines for construction of the respective new regional landfill.

The operation of the existing incinerators will be stopped by the same manner through construction of new replacing facilities.

5.3.4.2. Establishment of a system of waste disposal installations and facilities

In general the facilities for final disposal are the landfills and the installations for incineration of waste. As it was mentioned above for achievement of compliance with the EU legislation these installations have to fulfil the requirements of Directive 1999/31/EC on landfill of waste and Directive 2000/76/EC on incineration of waste. The main part of these requirements are regarding the design, construction, operation, closure, after-care and the monitoring of the facilities as well as the criteria for acceptance of waste at these facilities.

The establishment of a system of facilities and installations for waste disposal with sufficient capacity for the needs of the country is the main objective of the NWMP. The activities for achievement of this objective are presented in the Programme by main waste categories.

Facilities for disposal of municipal waste

According to the measures envisaged by the Plan for Implementation of Directive 1999/31/EC on landfill of waste a system of 54 regional landfills for municipal waste should be in operation by 16.07.2009. These landfills will have enough capacity for acceptance of the whole waste quantity destined for landfilling in the country. This includes funding of the operation of 3 existing landfills serving population above 300000 inhabitants that will be closed by 2008. These are the landfills in Suhodol (Sofia), Tzalapitza (Plovdiv) and Vuglen (Varna).

The identified 54 landfills are allocated in 6 groups as follows:

Group 1	12 existing landfills that meet the legal requirements and will be in operation for the period of validity of the programme. Three of the landfills will be closed till 2008.
Group 2	6 regional landfills for which funding by ISPA is approved and the construction starts in 2003.
Group 3	10 landfills that in 2003 are in a process of construction financed by state budget, EMEPA and/or other sources.
Group 4	8 landfills that should be constructed as soon as possible because the free capacity is running out or the existing facilities present high risk to the environment
Group 5	13 landfills that should be constructed because the free capacity is running out or the existing facilities present risk to the environment
Group 6	5 landfills that should be constructed because the free capacity is running out or serve relatively small number of inhabitants and the existing facilities do not present risk to the environment

Construction of landfills not indicated above will not be funded.

Due to the high costs for construction and because of the relatively short term of validity of the Programme (2003 – 2007) mandatory construction of incinerators for mixed municipal waste on the territory of the country is not envisaged. Despite this fact such installations may be constructed and operated on a commercial basis according to the municipal waste management programmes. State funding for the realization of such projects may be provided only if the implementation of the other measures is not endangered.

Facilities for disposal of hazardous waste

Taking into account the requirement for establishment of adequate system of disposal facilities and installations the necessity of construction of National Centre for treatment of hazardous waste is corroborated. The centre will be composed of installation for incineration, facility for physical and chemical treatment, facility for solidification, recycling, landfill for hazardous waste, landfill for asbestos, laboratories, facilities for waste acceptance and storage. The national infrastructure for disposal of hazardous waste will include also regional landfill and transfer stations for hazardous waste serving the National centre.

The companies that produce big quantities of hazardous waste will also construct their own disposal facilities in compliance with the conditioning plans and their waste management programmes approved by RIEWs. The main efforts will be directed towards effective implementation of the legislation within the fixed terms and formulation of measures ensuring the implementation of the Programme.

Till the construction of suitable disposal/recovery facility the export of hazardous waste for disposal outside the country will be allowed by observing the requirements of the national legislation in force, *Regulation (EEC) 259/93 on the supervision and control of the shipment of waste within, into and out of the European Community* and the *Basel Convention on the control of transboundary movement of hazardous waste and their disposal*.

Facilities for disposal of industrial non-hazardous waste

The construction of new facilities for disposal or recovery of industrial non-hazardous waste that will replace the existing facilities is obligation of the respective operators according to the terms fixed in the conditioning plans or the company's waste management programmes approved by RIEW. The implementation of the waste management programmes and the conditions of the permits will be the main means for ensuring the establishment of appropriate infrastructure for disposal of waste at company level.

It shall be allowed that the small non-hazardous waste producers may use the system of regional landfills for disposal of waste.

Facilities for disposal of construction and demolition waste;

The priorities for construction of suitable facilities for disposal of construction and demolition waste should be regulated by the municipal waste management programmes. The construction of the facilities should be realized entirely on commercial basis without additional funding by the state.

5.3.4.3. The charges for final disposal should cover the long term costs according to all legal requirements

The price for acceptance of waste in all disposal facilities should cover the costs for planning, obtaining of permits, design, construction, operation, monitoring, closure and aftercare activities paid by the respective operator.

This requirement may be partially applied only for facilities for disposal of waste of primary significance whose investments are entirely or partially granted by the state or international sources.

As it was mentioned in the section for financing and reimbursement of the costs in accordance with the "polluter pays" principle it may be expected gradual increase of the waste management charges for the period of validity of the programme.

5.3.4.4. Financial securities by the operators of facilities for disposal of waste

During the period of implementation of the Programme requirements for submission of financial securities by the operators of waste disposal facilities shall be introduced. For instance such security may be bank guarantee, insurance or other equivalent provision for covering all possible future costs for

closure, monitoring and aftercare for the disposal site. The aim of this measure is to avoid the risks in case of abandonment of the site in the event of eventual insolvency of the respective operator and the resulting costs for the state in this case.

5.3.4.5.Introduction of pre-treatment of waste before landfilling

For the achievement of compliance with the EU requirements the landfilling should be allowed only if the waste is pre-treated (Art. 6 of Directive 1999/31/EC on landfill of waste).

The pre-treatment of waste prior landfilling (except the separation at the source) involves high costs and should not be considered as an applicable option within a short term. Despite this fact the implementation of this requirement may result in considerable benefits to the environment and the initial steps in this direction should be taken during the next few years. At the same time the pre-treatment of waste may increase significantly the costs for disposal of waste thus promoting the recycling and recovery.

The pre-treatment of the municipal waste should be considered together with the implementation of the requirements for the biodegradable waste.

The main priority directions can be:

- implementation of the requirements for pre-treatment by the newly build regional landfills;
- pre-treatment of hazardous waste destined for landfilling;
- pre-treatment of waste with the purpose of recovery and/or recycling;
- pre-treatment of waste from the big industrial waste producers.

5.3.4.6. Development and implementation of National strategy for reduction of the quantities biodegradable waste going to landfills

The adoption of the National strategy for reduction of the quantities biodegradable waste going to landfills will set out the concrete implementation measures and the necessary capacity for treatment of the biodegradable waste.

Within a short term aspect sufficiently reliable information for the quantities and the quality of the biodegradable waste generated should be provided needed for the formulation of the national strategy in this field.

During the period of validity of the programme, efforts shall be put forth for the development of the market of compost in the country by the following activities:

- introduction of legal requirements for treatment of biodegradable waste;
- supporting the construction of composting installations by providing preferential conditions for funding;
- utilization of compost in case this is justifiable for land restoration of landfills, damaged areas and sites included in the programmes for elimination of paste waste contaminations funded by the state;
- conducting of information campaigns for the farmers about the benefits of the composting and the use of compost.

Notwithstanding, it can be accepted that the long term planning of the national infrastructure will require the realization of several pilot composting installations so that useful practical experience is gathered during their operation.

It is recommended that the construction of facilities for pre-treatment of waste including for biodegradable waste should be carried out together with the putting into operation of the newly build regional landfills for municipal waste.

5.3.5. Elimination and minimization of the risk resulting from the past waste contaminations

Because of the large number of illegal dumpsites and past waste contaminations in the country it is necessary that measures for their gradual cleaning up, sanitation and rehabilitation are taken without delay. With a view of avoiding their pollution once again the cleaning up of the illegal dumpsites should be coordinated with the measures for enlargement of the systems for organized municipal waste collection.

The solution of the problem with the contaminations caused by the incorrect storage of hazardous substances and waste on closed and abandoned industrial sites is one of the priorities of the NWMP.

5.3.5.1. Elimination of past waste contaminations from landfills and illegal dumpsites

The Plan for implementation of Directive 1999/31/EC on landfill of waste envisages that the cleaning up of all existing illegal dumpsites for municipal waste should be accomplished by the end of 2009. The municipal administrations are responsible for the development of detailed plans for cleaning and rehabilitation of the illegal dumpsites. With a view of providing of comparable data and ensuring the correct allocation and planning of the funds, the research and the assessment of the risks to the environment should be carried out in compliance with the methodological guidelines approved by the MOEW. The data collected from the inventory, examination and assessment of the risk will be fed in the register of the landfills and past waste contaminations kept by the EEA. The complete examination of the landfills and the past waste contaminations should be accomplished till the end of 2005.

Because of the high costs necessary for the implementation of the sanitation, the existing facilities should be prioritized according to the risk to the environment arising from these facilities. The measures for rehabilitation of the landfills with highest risk should be implemented within a short term. As a result of the implementation of the NWMP all facilities that constitute great risk of environmental pollution should be sanitized till 2007.

The funds for closure and rehabilitation of the illegal dumpsites and past contaminations with municipal waste will be provided by the municipal budgets and by the state budget.

5.3.5.2. Minimization of the risk from abandoned or closed industrial sites polluted with hazardous waste

The implementation of the programmes for elimination of past environmental contaminations for the privatized companies will be financially secured by funds form the State budget and will continue during the period of validity of the NWMP. By the implementation of the programmes the problems with the closed landfills on the territory of the large enterprises privatized after 1999 will be solved to significant degree. Necessary condition for achievement of optimal effect is the implementation of parallel conditioning plans for adaptation of the facilities into compliance with the environmental protection legislation.

The rehabilitation of the existing industrial sites and places for storage of waste for which funding from the state is approved will be obligation of the respective operators according to their waste management programmes.

In future by the provision of financial securities by the side of the operators of facilities and installations for disposal of waste a mechanism ensuring environmentally sound closure and land restoration of the facilities will be established.

5.3.5.3. Minimization of the risk to the environment and human health arising form storage of preparations for plant protection whose term of appropriate use is expired.

The existence of significant quantities obsolete pesticides and other preparations for plant protection whose term of appropriate use is expired that are stored in abandoned or non-safeguarded places constitute risk to the environment. This necessitates undertaking of urgent measures for improvement of the conditions for storage of these wastes and for their subsequent appropriate final disposal.

The export of the obsolete pesticides also can be acceptable solution due to the lack of appropriate facility for disposal in the country.

The financing of the activities for sanitizing of abandoned sites for storage of obsolete pesticides constituting highest risk will be provided by the Enterprise for Management of Environmental Protection Activities, the funds of the Ministry of Agriculture and Forestry and the municipalities on whose territory the sites are located.

5.3.6. Legal regulation of the waste management and acceleration of the implementation of the legislation and policy in this field

Bulgaria has applied for accession to EU and has accomplished the negotiations on Chapter 22 "Environment". One of the engagements for the accession is the full harmonization of the national waste management policy and legislation with the *Acquis Communautaire.*

5.3.6.1. Full compliance of the national waste management legislation with the EU requirements and standards

During the past few years Republic of Bulgaria has achieved considerable progress in transposition of the EU legislation in the sector. Despite this fact the analysis of the current situation shows that there are gaps in the compliance of the national legislation with the EU one. This necessitates drafting of new secondary legislation acts in the field of packaging and packaging waste, PCBs and PCTs, waste electric and electronic equipment as well as the adoption of several amendments to the existing legislation.

The adoption of the Waste Management Act gives the legal basis for the realization of these activities.

During the period of validity of the programme Republic of Bulgaria will continue to keep up with the development of the European waste management policy and will put forth the necessary efforts for transposition of the EU legislation adopted after 2003 within the deadlines applicable for the member states.

5.3.6.2. Planning of the waste management at national, regional and local level

The present programme sets out the strategic targets of the waste management policy and the Action plan for the period 2003 – 2007 for their realization. The formulated objectives and priorities for all fields of the waste management should ensure the implementation of an integrated and effective waste management system at all levels. The implementation of the NWMP will be assisted and supplemented by the realization of the following plans and programmes:

- Plan for implementation of Directive 94/62/EC on packaging and packaging waste;
- Plan for implementation of Directive 1999/31/EC on landfill of waste;
- Plan for implementation of Directive 2000/53/EC on end-of-life vehicles;
- National plan for management of sludge from waste water treatment plants;
- National plan for management of hospital waste.

For the period of validity of the programme other documents connected with the implementation of different EU directives and setting out the national policy in specific fields will be developed.

The planning of waste management activities at regional level will be of substantial significance for the successive implementation of the present programme. To this end it is necessary that the processes of cooperation among the municipalities in implementation of regional systems for waste collection and in establishment of adequate infrastructure for waste recovery and disposal is accelerated. Such cooperation will allow mainly the smaller municipalities to improve the waste management on their territory. Taking into consideration the importance of these regional initiatives the plans for regional development of each of the 28 regions of the country will be reconsidered and will be supplemented with specific regional measures for waste management in particular regarding the collection and transportation of waste and the construction and operation of waste disposal facilities.

During the first year of implementation of the NWMP the municipalities are obliged to update their waste management programmes in accordance with the Waste Management Act, the requirements of the secondary legislation and the objectives of the present Programme. In order to support this process the Ministry of Environment and Water will develop and submit to the municipalities updated "*Guidelines for elaboration of waste management programmes*".

5.3.6.3. Effective implementation of the waste management legislation

The effective implementation of the waste management legislation is an essential condition for improvement of the waste management at national, regional and local level. Despite the considerable efforts put forth during the past few years undertaking of additional measures in the following directions is necessary:

- identification of the persons that generate or carry out activities with waste, issuance of permits and registrations for these activities and for the facilities carrying out waste management activities following the procedure of the WMA.
- monitoring and inspections for conformity with the legal requirements and the observation of the conditions set in the permits for waste management activities;
- application of effective sanctions and penalties in case of non-fulfilment of the requirements with a purpose of achieving compliance with the legislation;

- appointment of sufficient, well qualified and motivated personnel in the competent authorities;
- provision of enough and appropriate technical resources (equipment etc.);
- introduction of information systems for collection and processing of data;
- clear and proper accounting of the results from the monitoring and the inspections of the installations for recovery or disposal.

The measures that shall be undertaken for the implementation of the legislation include:

- adequate implementation of the permit and registration regimes and the programmes for control and monitoring of the waste management activities and the facilities for storage, recovery and disposal;
- assessment of the necessary technical and human resources for development and implementation of programmes for control, monitoring and operation, which will ensure the achievement of high level of compliance;
- periodical reassessment of the resources and the procedures for permit issuance and control of the waste management activities and their updating;
- assessment of the sanctions imposed for non-fulfilment of the legislation and the conditions set in the permits for waste management activities as well as their eventual adaptation according to the risks to the environment caused by the violations.

The system for imposing of sanctions includes:

- identification of the gaps that allow the sanctions not to be applied or that are not well stipulated in the national legislation and that are not in compliance with the EU requirements;
- assessment of the present amounts of the fines and the sanctions ant their comparison with the real costs for elimination of the environmental damages that could arise in case of eventual violation;
- assessment of the frequency and the suitability of the procedures for monitoring and control including the procedures for detection of the violations and imposing of sanctions.

For the improvement of the control functions and the monitoring exercised by the MOEW, EEA and RIEWs it is envisaged:

- research, introduction and application of methods for sampling and analytical control of the waste in accordance with the international (ISO) and European (CEN) standards;
- authorization of more laboratories for carrying out of waste analyses;
- control of the implementation of the planned measures and activities;
- control over the quality of the laboratory analysis.

5.3.7. Provision of sufficient and reliable data for the waste

The provision of sufficient and reliable information for the generation, storage, recovery and disposal of the waste is necessary condition for the planning and control over the waste management activities. Besides, the establishment of appropriate information system should ensure the fulfilment of the reporting obligations by the side of Republic of Bulgaria to the European Commission, the European Environment Agency, Eurostat and of the obligations as a party to the Basel Convention on Control of Transboundary Movement of Hazardous Wastes and their Disposal.

5.3.7.1. Development and running of centralized information system for the waste

The collection, processing and analyzing of the data for the waste as well as the data for the recovery and disposal activities has several purposes:

- fulfilment of the EU requirements regarding the reporting of waste management data;
- provision of detailed information necessary for the planning, development and management of the activities with waste;
- provision of the data necessary for monitoring and control;
- provision of information about the persons that take part in the process of waste management.

The national legislation currently in force sets the main procedures for data reporting by the waste producers and waste holders and by the persons that carry out activities with waste and the operators of facilities for recovery and disposal as well as the requirements for processing and submission of information by the responsible institutions. Despite this fact the existing procedures should be improved and the reliability of the data have to be increased. This requires provision of enough personnel, technical equipment and suitable software products for the functioning of the institutions engaged. The planned amendments of the legislation should clearly define the responsibilities of the different institutions and to ensure effective collection and processing of the information.

During the period of implementation of the Programme transition from reporting on paper to collection and processing of the information in electronic form shall be ensured.

5.3.7.2. Development and implementation of adequate procedures for reporting to the European Commission for waste management issues

The availability of regular, comparable and representative data for the generation, recycling, recovery and disposal of waste is obligation of every member state according to Regulation (EC) No 2150/2002 of the European Parliament and of the Council on waste statistics, the EU requirements regarding the waste reporting set by *Directive 91/692/EEC on standardizing and rationalizing reports on the implementation of certain Directives relating to the environment* and the decisions deriving from this directive as well as by various provisions of the Community's directives and regulations from the framework legislation on waste, transfrontier shipment of waste, waste statistics and management of specific waste streams such as packaging and packaging waste, batteries and accumulators, used oils etc. Despite the fact that at the moment the obligations for reporting of data for management of waste applied to the member states are not in force for Republic of Bulgaria, the country should set out adequate procedures that allow the collection of the necessary reporting information during the period of implementation of the NWMP.

5.3.8. Strengthening of the administrative capacity of the institutions responsible for management of the waste in the country

The institutional and organizational frameworks at different levels of the waste management system are of high priority for the implementation of the legislation and the NWMP.

The MOEW will continue to coordinate at national level the waste management activities including by establishment of procedures for effective interaction between the institutions engaged in the implementation of the different measures.

5.3.8.1. Provision of enough and qualified personnel and technical resources for the institutions

The planning, regulation and enforcement of the waste management legislation depend on the existing human resources in the responsible institutions. In order to support the implementation of the legislation the competent authorities at national, regional and municipal level need enough and well trained personnel engaged with:

- development and implementation of legislation, technical standards and guidelines for waste management activities;
- development of the waste management policy, planning and implementation on national and regional level;
- issuance of permits for activities with waste and construction and operation of facilities for recovery and disposal;
- control, inspections and monitoring of the activities and installations that generate and/or treat waste;
- initiation and enforcement of the measures for implementation of the legislation;
- collection, processing, analyzing and reporting of data;
- preparation, development, assessment, realization and supervision of projects for establishment of the national infrastructure for waste disposal.

The implementation of the NWMP will require improvement of the administrative capacity on national, regional and local level.

In order to ensure the supervision and control of the fulfilment of the waste management requirements it is necessary additional personnel in MOEW, RIEW and EEA as well as in the other institutions engaged in the implementation of the legislation to be appointed. At the same time the experts working in the administration should have the necessary qualification and to be trained.

The implementation of the legislation will require also provision of appropriate equipment for the state institutions necessary for performance of their functions. In short term aspect an assessment of the available equipment should be carried out and the priorities and the funds for supply of new equipment have to be determined. Special attention should be paid to the equipment for sampling and monitoring, the laboratories, the collection and processing of the waste management data.

The improvement of the administrative capacity will require provision of additional budget funds for the appointment of additional personnel and provision of the necessary equipment and techniques.

5.3.8.2. Strengthening of the capacity of the municipal administrations for establishment of integrated and effective waste management systems

The planning and the establishment of financially secured and affordable for the population systems for collection (including separate one) and transportation of waste, construction and operation of facilities and installations is a challenge for the great part of the smaller municipalities. This necessitates undertaking of measures for encouraging the cooperation among the municipalities with a purpose of fulfilling their responsibilities. This will support the improvement of the waste management systems in the municipalities and an access to the necessary know-how and technical infrastructure for waste disposal will be ensured by the regional initiatives at an affordable for the population price.

In short term aspect additional programmes for training of the environmental experts from the municipal administrations should be developed. These programmes should pay special attention to the options and the good practices for introduction of separate waste collection; treatment and final disposal of municipal waste; management of construction and wide spread waste (used oils, end-of-life vehicles, spent batteries and accumulators, fluorescent lamps etc.).

5.3.9. Increase of the investments in the sector and implementation of the principles "producer responsibility" and "polluter pays" in the system for integrated waste management

Taking into consideration the funds spent for financing of the municipal waste management systems it can be concluded that it is necessary that adequate amounts of funds have to be provided for equipment, containers for collection, transport means and disposal facilities as well as for operating costs for performance of the activities and for operation of the facilities.

The implementation of the principles "producer responsibility" and "polluter pays" towards the waste management systems in accordance with the requirements of the national and the European legislation entails increase of the charges paid by the households and by the industry to levels allowing the reimbursement of all costs for the current activities as well as for the future establishment of new facilities and services.

5.3.9.1. Charging of fees that cover long term costs for waste management

By virtue of the national legislation the municipal administrations are entirely responsible for the organization of the activities for management of the municipal waste and maintenance of the cleanness of the settlements. The financing of the services and activities is ensured by funds included in the respective municipal budgets that are provided through the municipal waste fee paid by the households and the industry. The amount of the collected fees depends on the specific conditions in each municipality.

The organization of systems for management of waste (collection, temporary storage, transportation, recovery and disposal) in compliance with the higher legal requirements entails increase of the costs for waste management. In order to achieve compliance with these requirements it is necessary a mechanism for progressive increase of the "municipal waste fees" to be established with purpose of attainment of such amounts of the fee so that the long-term costs are covered. At the same time by the raising of the fees the condition of the local economy and the affordability of the fees comparing to the population incomes should be taken into account. It is of great importance that the funds raised by the fees are spent only for waste management activities by the most effective manner.

It is envisaged that appropriate conditions for more flexible determination of the municipal waste fees will be set. The purpose is the municipal waste fee to be determined on the basis of the volume and/or quantity of the waste generated instead of on the basis of the tax evaluation of the real property.

As a next step "Guidelines for determination of municipal waste fee" will be developed. It will contain non-binding recommendations for improvement of the price-formation in the waste management field.

As a part of this purpose special attention should be paid to the determination of adequate charges for landfilling. They have to cover all costs of the operator for construction and operation of the

landfill as well as the estimated costs for the activities after the closure of the site for period of 30 years. These measures may be effective only if they are applied together with strengthened control by the side of the competent authorities over the illegal dumping of waste and over the operation of landfills that are not in compliance with the legislation.

5.3.9.2. The incomes from permit issuance to cover the administrative costs for monitoring of the permits

The fees applied at the moment for issuance of permits for activities with waste are not bound with the managing and monitoring of the permits. Their adaptation to levels covering the real costs will enable the competent authority to cover the costs for inspections of the sites, permanent control and subsequent monitoring of the control parameters etc. The binding of the fees for permit issuance with the real costs for implementation of the permit regime reflects the "polluter pays" principle.

The increase and the differentiation of the fees for permit issuance will allow the competent authorities to exercise effective control.

5.3.9.3. Effective application of economic instruments

During the implementation of the NWMP the necessity and suitability of the application of specific economic instruments for the achievement of the objectives set in the Programme will be considered carefully. Taking into account the practices in the EU countries the following options will be considered:

1. Introduction of additional charge for landfilling of waste

The introduction of additional charge proportional to the waste quantities accepted for disposal paid by the landfill operators may achieve the following objectives:

- rising of the charge for landfilling and thus contributing to the application of recycling and recovery;
- raising of additional funds that shall be used for closure of illegal dumpsites and paste waste contaminations.

It is possible the charge to be introduced for specific waste streams (packaging waste, biodegradable waste, non-treated waste, hazardous waste etc.).

The introduction of additional charge for landfilling should be preceded by negotiations among the state authorities, municipalities, industry, NGO and other parties concerned. In making the decision for the introduction of the fee special attention should be paid to its affordability for the general public.

2. Product charges

The introduction of charges paid by the producers and importers of goods and products that after end use generate wide spread waste has for an object to ensure the necessary funds for separate collection, recovery or disposal of specific groups of waste.

Product charges for tyres, batteries and accumulators, motor vehicles have been introduced in Bulgaria after 1999. It is envisaged that new product charges shall be introduced for products such as packaging, oils etc. The introduction of product charges should be applied after consultation with the economic operators concerned for the determination of the amount of the charges and for ensuring transparency and effectiveness of spending of the funds raised.

3. Tax concessions

For the period of implementation of the NWMP the possibility of introduction of the following tax concessions will be considered:

- exemption of the transactions for waste collection and transportation, separate collection, recovery and disposal of municipal waste as well as for cleaning and sanitation of illegal dumpsites and areas contaminated with waste from Added Value Tax (VAT) with a purpose of alleviating the tax burden for the population resulting from the rising of "municipal waste fee". By this means additional financial resources will be ensured for activities with municipal waste and it will promote the foreign investments;
- cession, exemption or reduction of the income tax for the companies investing in recycling of municipal, industrial or hazardous waste.

The decision for application of these tax concessions will depend on their influence on the revenues of the state budget.

5.3.9.4. Improvement of the efficiency of spending of the funds allotted by programmes of the European Union, foreign donors and the state

The improvement of the efficiency of spending of funds allotted by foreign and national sources for the realization of projects in the waste management field requires:

- improvement of the coordination among the institutions taking part in the programme process;
- attracting of the municipal administrations to take part in the programme process and ensuring of more effective interaction between the state and the municipal administrations;
- transition from annual to multi-annual planning;
- strengthening of the capacity of the municipal administrations for development, presentation and implementation of projects.

EMEPA will continue to play important role in funding of waste management projects and activities at national level. The increase of the amount of the credits given by EMEPA instead of the free grants will allow the accumulation of additional funds for the period on implementation of the Programme.

The implementation of the NWMP will require significant financial resources form the state budget for construction of regional infrastructure for disposal of municipal waste as well as for the co-financing of international projects. The funds will be allotted directly to the respective municipalities or through additional state subsidies for EMEPA.

5.3.10. Public participation

The necessity of continuation of the intensive dialogue between the competent authorities and the stakeholders that has been developed during the last years is corroborated. This will contribute to overcome a variety of social and institutional barriers to the information exchange and to reach consensus for the implementation of the measures envisaged in this Programme.

The campaigns for raising of the public awareness and the consultations with the stakeholder in waste management activities will contribute to make correct decisions for the implementation of the NWMP.

5.3.10.1. Dialogue with the industry and the private sector operating in the waste management field

To achieve an exchange of information and a transfer of the know-how in order to improve the effectiveness of the waste management, the dialogue with the private waste management sector is indispensable. It is of primary importance to:

- inform the population and the industries on a regular basis and to involve them in the decision-making processes for waste management issues;
- the organization of training courses in waste management for the private sector;
- introduction of eco-management systems and audit schemes according to Directive 93/1836/EC on eco-management and audit schemes (EMAS) and ISO 14 001;
- encouraging of the achievement of agreements with different industrial branches instead of the direct administrative measures.

5.3.10.2. Development and implementation of long term communication and consultation with all stakeholders in waste management

The National campaign "For clean environment" was established in 1998 and the competitions organized between municipalities, schools and NGO's concerning the cleaning up of polluted sites during this period, as well as the regular dissemination of information materials, lead to raising of public awareness in the waste management issues.

The present NWMP envisages the gradual extension of the scope of this well-applied programme and its development in the directions of provision of environmental training in schools, involvement of the industry to participate in development of best ecological practices, conducting of information campaigns, etc.

At the municipal level the population shall be informed and involved in the decision making processes, set out in the municipal waste management programs. Special attention should be paid to the method of determination of the "municipal waste fee" and the accounting of the funds spent.

The communication objectives can be split up in two categories: awareness raising and stakeholders' training and communication.

The awareness raising has a long-term objective to achieve change in the behaviour of the population by awakening of the environmental risks related to the depletion of the resources, waste generation and disposal.

The communication and the training are a process by which on the one hand, information is provided to the stakeholders and on the other hand ideas and actions, concerning waste management are exchange and assessed.

The education and the consultation with the stakeholders will be important for the next years in the following directions:

- facilitation of the consultations on the implementation and the subsequently updating of the NWMP;
- provision of information concerning the waste management policy;
- obtaining of information, feedback and support by the stakeholders concerning the waste management;

- facilitation of the formulation, consultation, approval and implementation of the activities concerning the financing and reimbursement of the costs.

5.3.11. Management of specific waste streams in compliance with the EU requirements and national legislation

In addition to the general objectives, the present NWMP establishes concrete requirements for improvement of the existing practices for management of specific groups of wide spread wastes. The reason for that is the existence of specific provisions of the EU legislation as well as the potential environmental risks of these wastes.

Taking into consideration the existing plans and programs for management of packaging and packaging waste, end-of-life vehicles, sludge from waste water treatment plants and hospital waste, NWMP aims to generalize the requirements already set and to formulate the frame for development of other programs for implementation of the directives in the field of waste management.

5.3.11.1. Batteries and accumulators

The environmentally sound management of spent batteries and accumulators is of significant importance within the general hazardous waste management policy. Taking into consideration the significant quantities of the produced and imported lead-acid batteries and accumulators, the improvement of the existing collection and recycling systems for this waste will be one of the main priorities for the period of the implementation of the NWMP.

5.3.11.1.1. Compliance of batteries and accumulators put on the market with the requirements of Directive 91/157/EC.

The batteries and accumulators put on the market shall comply with the requirements set in the legislation for the heavy metals content, marking for separate collection etc. Special attention should be given to the effective enforcement of legislation for the batteries incorporated in different appliances.

The establishment of the institutional arrangements and training of personnel involved in the control of the batteries put on the market will be of primary importance.

5.3.11.1.2. Reduction of environmental risks related to the collection of lead-acid batteries and accumulators

Despite of the high collection rates achieved, the NWMP recognizes the management of lead-acid batteries and accumulators as a priority issue. The improved collection practices and the reduction of environmental risks resulted from improper management of the electrolyte will be the main topics in the next few years. The manual fragmentation of lead-acid accumulators and removal of the electrolyte should be avoided.

The development of national system for the management of lead-acid accumulators will require efforts of all concerned parties such as manufacturers and importers of batteries and accumulators, collection and recycling branch chambers and the competent authorities. The optimal decision for spending of the funds of EMEPA raised from product charges and needed for providing of collection

infrastructure should be made together by the MOEW, producers and importers of batteries and companies processing or collecting lead acid batteries.

The enforcement of legal requirements should guarantee the compliance of the treatment of lead-acid accumulators with the waste management legislation. After the adoption of new Regulation and after the strengthening of the control over the activities with the spent batteries, the Regional Inspectorates have to start re-examination of the permits issued for collection, storage and transportation of lead-acid batteries and the conditions set therein in order to limit the risks to the environment. The competent authorities should take uncompromising measures in order to stop the illegal discharges of electrolyte and to ensure its safe storage.

5.3.11.1.3. Establishment of adequate recycling infrastructure for lead-acid accumulators

The existing recycling facilities have sufficient capacities for recovery of the whole quantity of the lead-acid accumulators generated on the territory of the country.

Nevertheless, significant investments will be required for the reconstruction of installations at *Lead and Zinc Complex* in Kardjaly and the adaptation of these installations in compliance with the environmental legislation.

In middle term aspect, a possibility for recycling and/or recovery of the non-metal components of the accumulators should be provided.

5.3.11.1.4. Establishment of schemes for collection and recovery/disposal of other types of batteries and accumulators

In middle term aspect it is envisaged establishment of schemes for collection of small batteries. For this purpose pilot projects for introduction of such schemes at municipal level will be financed.

Application of compulsory take-back of the waste batteries at the place of selling and realization of periodic collection campaigns will contribute to achievement of higher rates of collection of spent batteries.

The provision of appropriate disposal or recovery capacity taking and the export for recycling out of the country will be of decisive importance for achievement of good results.

5.3.11.1.5. Improvement of the efficiency of spending of funds raised by the product charges

The funds gathered in the EMEPA from the product charges paid by the producers and importers of batteries and accumulators shall be used solely for the realization of projects for collection, recovery and disposal of spent batteries and accumulators. The implementation of environmentally sound system for collection of lead-acid accumulators will be the main priority for funding.

Attention should be paid also on the attainment of higher levels of the collection of the product charges thus ensuring enough funds and avoiding the distortion of the competition among the different producers and importers of batteries and accumulators.

5.3.11.1.6. Provision of information to the consumers about the management of batteries and accumulators

The attainment of the above objectives and the achievement of high results will not be possible without the active participation of the population in the proposed collection schemes. This requires the population to be informed about the risks of uncontrolled disposal of batteries and accumulators, the meaning of symbols used for marking, the requirements for removal of batteries incorporated in the appliances and the possibilities for participation in the collection schemes.

5.3.11.2. End-of-life vehicles

The implementation of environmentally sound system for management of end-of-life vehicles (ELV) is issue of basic importance of the national waste management policy. The fulfilment of this requirement will be additionally impeded in the forthcoming years because of the import of large number second-hand vehicles and the longer lifetime of the vehicles in comparison to the other European countries.

In May 2003, the Bulgarian Government adopted Program for implementation of Directive 2000/53/EC on end-of-life vehicles. The NWMP follows the basic principles and objectives set out in this implementation program. The indicative goals for recycling, recovery and re-use of ELV waste for the period till 2007 are as follows:

Years	**Achieved minimum % of recovery and re-use of the ELV waste compared to the total amount of stockpiled waste from all ELVs by the respective year**	**Achieved minimum % of recycling and re-use of the ELV waste compared to the total amount of stockpiled waste from all ELVs by the respective year**
2005	11	10
2006	22	21
2007	27	25

The achievement of these requirements for recycling and re-use is connected with the implementation of the further down mentioned measures.

5.3.11.2.1. Harmonization of the national legislation in the field of end-of-life vehicles with the EU requirements

By the adoption of the Waste Management Act, the obligations of the economic operators (importers and producers of vehicles) are laid down and appropriate conditions for establishment of systems for treatment of wide spread waste, one of which is the ELV waste are set. Moreover the obligations of the mayors of municipalities, the natural and legal persons, the punitive provisions for violations committed by them, as well as the fines/sanctions, which are imposed for the respective violation are specified.

The transposition of Directive 200/53/EC on end-of-life vehicles requires a new Regulation on the conditions and procedures for pollution reduction from waste from end-of-life vehicles to be adopted in order to replace the existing legislation. Changes in Regulation I-45/2000 on the registering of motor vehicles of the Ministry of Interior will also be made in order to ensure the compliance between both regulations.

Rules for spending of the funds of EMEPA for realization of the programs for financing of the ELV management activities will be developed till 30.06.2004.

5.3.11.2.2. Provision of sufficient administrative capacity of the competent authorities, responsible for the control of end-of-life vehicles management

Several groups of administrative and organizational measures, which are very important for achievement of the ultimate goals of the Programme, should be implemented.

Additional staff in RIEW and MOEW in the waste management departments and sectors, responsible for the management of ELV treatment activities should be appointed. The experts engaged in implementation of the requirements of the Regulation for treatment of ELV waste should be trained for issuance of permits, maintenance of the information system related to these activities, control over the fulfilment of the legal requirements, reporting of the collected information to the respective authorities.

Training of competent state and municipal authorities in the following main areas:

- legal requirements and responsibilities;
- inspection and control of the observation of the Regulation's provisions;
- maintenance of the information systems for vehicles and ELVs;
- reporting to the EC;
- setting up of central and regional registers with information for the persons obliged to achieve the quantitative targets of the ELV according to the Regulation;
- control of the market for fulfilment of the requirements for the parts for vehicles placed on the market.

Provision of information for the administration of the process, including:

- development and putting into operation of national information system for ELVs and ELV waste, which should include MOEW, RIEW, Ministry of Interior-Traffic Police, their regional units and the municipalities;
- development and putting into operation of a unified system for vehicles between the Ministry of Interior-Traffic Police, Customs Agency, the Ministry of Finance – Tax Administration, and the municipalities;
- preparation for the reporting to the EC according to the Directive's provisions on reporting and the Directive 2000/53/EC.

The main measures related to the control of the responsible economic operators are:

- review of the current arrangement for inspections in order to outline the necessary improvements;
- development of methodological guidelines for the control authorities in order to facilitate their control function and to unify and standardize it for the whole territory of the country;

- planning of the inspection through the development of annual plans;
- coordination of the activities of the various control authorities – RIEW, Traffic Police, Municipal Inspection and police.

5.3.11.2.3. Establishment of a specialized ELV Recovery Organization

The ELV Recovery Organization (ELVRO) can be established by importers/distributors of new vehicles and second-hand vehicles, persons that have obtained permit for dismantling of ELV, recycling enterprises using the ELV waste from the dismantling as a raw material, and other persons concerned.

The establishment of ELVRO can be legally regulated by the new ELV Regulation, which will be adopted in 2004.

It is generally expected that ELVRO will:

- administer and manage the entire ELV treatment scheme;
- undertake on behalf of its members the fulfilment of their individual obligations arising from the legal requirements;
- communicate with the competent state authorities in regard to the implementation of the legislation and inspection of sites carrying out depollution, dismantling and other type of treatment;
- promote the re-use and recycling of spare parts and materials from the dismantling of end-of-life vehicles, to monitor and promote the achievement of the targets for re-use, recovery and recycling;
- verifies the specific data for the activities related to the scheme;
- maintain the information system for all ELV treatment activities.

It is considered that the targets set in the Directive will be achieved much easier by joining a specialized organization than the individual fulfilment of the engagements of all persons obliged. Thus the control, the inspection and the provision of information will be facilitated.

5.3.11.2.4. Establishment of the sufficient capacity of facilities and installations for collection, storage, dismantling and recovery of end-of-life vehicles

For achievement of the targets set in the national legislation and in Directive 200/53/EC on end-of-life vehicles it is necessary that actions for increasing the technical capacity of the country for coping with the large amount of stockpiled ELV should be undertaken.

To this end, except the legal and administrative measures that are already undertaken, it is also necessary to establish national centres for dismantling of ELV. These centres will ensure the processing of about 16 000 vehicles per year and their location will take into account the accumulation of vehicles in the different regions.

For achievement the technical parameters related to the Directive's objectives it is necessary that the funds raised in EMEPA form the product charges are used for construction of facilities for recovery of the non-metal waste from ELV. For this purpose the relevant facilities for recovery of waste tyres and rubber bands, plastics, textile, leather, insulation, etc. should be constructed, which is also related to the fulfilment of other directives from the "Waste Management" sector and the corresponding Bulgarian legislation.

It is necessary the construction of sites for temporary storage of ELVs that should provide appropriate conditions for storage of ELVs till their delivery for dismantling. The vehicles will be collected on the temporary storage sites on the territory of the respective municipality and afterwards they will be delivered to the dismantling canters that will be equipped with specialized installations for dismantling.

The small collection and dismantling canters – former auto-morgues, should adapt the technical conditions in compliance with the requirements of the Regulation and the conditions of the permit issued for treatment of the waste.

5.3.11.2.5. Development of financial scheme for financing of the collection, dismantling, recycling and recovery of end-of-life vehicles

The activities for achievement of the targets set in the Directive will be financed mainly through two sources:

1. The positive financial results of the different companies from dismantling of ELVs, obtained from sales of second-hand parts and units and the delivery of metal scrap for re-melting.
2. Financing of the activities by EMEPA - through the product charges used for financial provision of the national ELV treatment system.

In the beginning of the implementation of the NWMP, the sources from point 1 will be of main importance and the sources from point 2 will start to dominate from 2004. The financing by the EMEPA will be planned and implemented according to particular programs, which include financing of investments as well as operating costs. These financial resources will be allocated in the following main directions:

- building of two national canters for dismantling of end-of-life vehicles to the total amount of 20 million levs and the activities will start in 2004 and will be completed in 2005;
- implementation of municipal projects related to the achievement of the targets set in the national legislation;
- conducting of information campaigns for training of the population and the economic operators including the operators of dismantling centres for the correct implementation of the activities with ELV;
- granting of free of interest loans for supporting of private entrepreneurs willing to improve the conditions of their centres for dismantling of end-of-life vehicles for the purpose of achieving of full compliance with the legal requirements;
- development of information system which includes all responsible institutions and training of the authorities to work with it. The system will include development of software and its dissemination to the institutions and to the private companies, that are obliged to provide information for reporting of the activities related to the task.

5.3.11.3. Waste oils

The substances contained in the oils constitute danger to the environment during all stages of their life cycle. The prevention of these harmful impacts should be ensured through systematic and adequate control of the material flows and the emissions. In this part of the NWMP the main objectives

for management of waste oils and oil products are set out. These objectives will be supplemented and specified by the adoption of *Program for implementation of Directive 75/439/EC on the disposal of waste oils*.

5.3.11.3.1. Establishment of legal and financial preconditions for implementation of environmentally sound system for management of waste oils

It is envisaged that new *Regulation on the requirements for the treatment and transportation of waste oils and oil products* will be adopted that will replace the existing national legislation. The proposed amendment aims at determining of specific responsibilities of the producers and importers of oils for establishment of systems for collection, regeneration and recovery of waste oils.

The adoption of the regulation will allow the establishment of sustainable schemes for financing of the collection and regeneration of waste oils where this is technically feasible. The MOEW will initiate consultations with the producers and importers of oils about the introduction of product charges or other equivalent measure for ensuring the realization of the measures for implementation of this programme.

Together with the development of the new legislation, Bulgarian standards and guidelines for the requirements toward sites for storage and treatment of waste oils, as well as towards transport means used etc should be elaborated.

5.3.11.3.2. Establishment of infrastructure for collection, regeneration and other methods for recovery of waste oils

The improvement of current practices for storage, collection and transportation of waste oils is main priority of the policy for management of this type of waste. This affects to great extent the places for replacement of motor and transmission oils and the places for temporary storage of waste oil products. The adequate implementation of the legal requirements applicable to the waste oil treatment activities will contribute to reduction of the possibilities for illegal discharge or uncontrolled incineration of waste oils. At the same time gradual and steady increase of quantities of waste collected and their subsequent regeneration and recovery. The introduction of effective system including issuance of permits, application of unified documentation for certifying of the delivery and acceptance of the waste oils and waste oil products, submission of annual reports, carrying out of periodic inspections and imposing of strict sanctions for violation of the legal requirements aims at eliminating the risks to the environment resulting from the improper storage, collection and disposal.

The regeneration of waste oils is of higher priority than their utilization as a fuel. In this regard the capacity of the existing facilities for regeneration and recovery of waste oils and the refineries for processing of base oil is necessary to be used at the most. It is necessary that additional facilities for recovery of waste oil products are constructed.

Another possibility is the utilization of waste oils as a fuel in the existing installations (cement kilns, metallurgy, thermo-electric power plants etc.) in case that they are in compliance with the environmental protection requirements.

The provision of information about the possible negative impacts to the environment and to the human health as a result of discharge or inappropriate management of waste oils will be of great significance for the successive implementation of the proposed measures.

5.3.11.3.3. Establishment of a information system for collection and processing of data for the generation and management of waste oils

Sufficient and reliable data are necessary for the effective planning and management of waste oils. By this programme, it is envisaged that an information system for collection and processing of data for generation, collection, transportation, regeneration, recycling and disposal of waste oils and waste oil products will be developed and operated. The system has to be compatible with the existing databases for hazardous waste and should allow monitoring and control of waste oils flow from the consumers to the facilities for recovery or final disposal.

5.3.11.3.4. Establishment and implementation of procedures for enforcement of the legislation

The control of the implementation of the requirements for management of waste oils and oil products has to be performed on basis of specific procedures for permit issuance, inspections, monitoring and imposing of sanctions. It is envisaged that proper training of the personnel of the competent authorities engaged in the application of these procedures at national, regional and municipal level will be provided and the administrative capacity of the institutions should be extended in accordance with their functions. The proper co-ordination among the institutions engaged in the control of the implementation of the legislation for waste oils is also of significant importance.

5.3.11.4. Polychlorinated byphenyls and polychlorinated terphenyls

The limited use of polychlorinated byphenyls (PCB) and polychlorinated terphenyls (PCT), the lack of production of PCBs in the country and the ban on the import of PCBs/PCTs containing materials and equipment since 1985 significantly reduced the scale of the problem for management of these waste. Nevertheless PCBs/PCTs should be considered as a priority waste stream, which even in small quantities could cause significant damages to the environment and to the human health in case of improper management.

The adoption of *Regulation on the requirements for treatment and transportation of PCBs/PCTs containing waste* will ensure the harmonization of the national legislation with the requirements of Directive 96/59/EC on the disposal of PCBs and PCTs and will lay down the rules for management of these waste streams. The measures set in the Program aim to ensure inventory of PCBs contaminated equipment in the country, its appropriate operation and stop the operation of this equipment within the deadlines fixed in the Directive and the subsequent storage and disposal of the waste.

5.3.11.4.1. Inventory of PCBs contaminated equipment. Establishment and processing data base on PCBs/PCTs waste

The complete inventory of PCBs contaminated equipment will be of significant importance for the planning and organisation of decontamination, collection, storage and disposal. For this purpose the activities and the inventory started in 2000 in the frame of Twining project BG99/EN01 should proceed and the inventory of the equipment potentially containing PCB existing in the country have to be complete. The achievement of this objective requires the persons engaged in the inventory to be qualified and properly trained.

The information about PCBs contaminated equipment obtained from the inventory and the subsequent activities for collection and disposal of the waste will be included in a specialized database at the EEA.

5.3.11.4.2. Drawing up of plan and time schedule for disposal of PCBs/PCTs waste

The inventory of the PCBs/PCTs contaminated equipment will be a base for development of a plan for gradual disposal of this type of waste. This plan should propose a schedule for stooping the operation of the equipment and for disposal of the waste and to determine the responsibilities and the necessary funds for its implementation.

5.3.11.4.3. Provision of technical capacity for treatment and disposal of PCBs/PCTs containing waste

It is envisaged that the construction of the National Hazardous waste disposal centre will finish in 2008. Due to this reason during the period of implementation of the NWMP there will be no reliable technical solution for disposal of PCB/PCT waste in the country. The lack of suitable disposal facility necessitates setting of requirements for storage of PCB/PCT containing waste within shortest period of time.

Incineration in the existing facilities after their proper reconstruction, construction of specialized facilities and the export of PCB for disposal in other countries are possible options for the period till 2008. The final decision requires detail planning and evaluation of the different possibilities in the context of the risks to the environment and the expenditures for disposal.

5.3.11.4.4. Reduction of the risks caused by contamination with PCBs/PCTs, used in materials and equipment not subject to the inventory

For the period of implementation of the programme, measures for collection of waste, containing PCBs/PCTs not subject to the inventory should be introduced. For this purpose, EMEPA will provide funds for collection campaigns. The implementation of the measures will require sufficient personal in the competent authorities and clearly defined responsibilities. The implementation of training program for the personal, engaged with waste collection, including for the specialized companies for repairing of electric and electronic equipment, as well as the provision of information to the population will be the main activities for supporting the collection projects.

5.3.11.5. Sludge from waste water treatment plants

The treatment of wastewater in urban wastewater treatment plants reduces significantly the pollution of surface waters, but on the other hand it is connected with generation of waste. The sludge from wastewater treatment plants contains many potential pollutants, so its treatment and disposal needs to be planned as a component of the system for integrated waste management.

Taking into consideration the unsatisfactory conditions of the treatment of WWTP sludge in the country, in 2001, *National plan for the disposal of sludge from municipal waste water treatment plants* was developed with PHARE support and approved by MOEW. This national plan covers the period till 2025 and it envisages the management of the sludge to be organized at administrative District level. During the period of implementation of the present programme, the following objectives will be of primary priority.

5.3.11.5.1. Establishment of adequate system of facilities and practices for pre-treatment of WWTP sludge

The existing restriction for landfilling of liquid wastes and wastes emitting an unpleasant odour necessitates the WWTP to be mechanically dewatered. The additional measures for control and limitation of the emitted odours are directed mainly toward the reduction of the generation of biogas and leachate from landfills and they should envisage:

- pre-treatment;
- appropriate storage of the sludge ;
- immediate covering of landfilled sludge with other wastes or isolating material;
- mixing of the dewatered sludge with lime;
- introduction of tempered anaerobic digestion at the large WWTP.

The application of the pre-treatment of the WWTP sludge will be reflected in the future National Strategy for reduction of the quantities biodegradable waste going to landfills. The Strategy will outline also the possibilities for application of other treatment methods, recovery or disposal of swage sludge, such as:

- anaerobic digestion at high temperature (35^{o} C) for a period of at least 15 days prior the mechanical dewatering and disposal by landfilling;
- thermophilic aerobic digestion (55^{o} C) followed by mechanical dewatering and disposal by landfilling;
- mechanical dewatering of the sludge generated and subsequent composting together with a plant and wood waste;
- incineration of sludge generated form the mechanical dewatering and subsequent disposal of the ashes by landfilling;
- use of sludge in agriculture as an option for improvement of the soil quality. This will require additional investments in installations for stabilization and disinfecting as well as measures for reduction of the pollutants contained in the waters discharged in the sewage systems;
- use of preliminary stabilized sludge in rehabilitation and restoration of damaged lands.

The finding of economically effective and acceptable to the environment solutions depends to the great extent on the local conditions and the selected technical solution should take into account these characteristics. The implementation of optimal technical solutions for pre-treatment of the sludge requires longer period and could not be achieved within the time framework of the present program. Nevertheless the municipal administration and the operators of MWWTP should take the necessary decisions, to propose and to justify before the competent authorities the concrete measures for pre-treatment of the sludge and the deadlines for their realization. This will require revision of the waste management programs of the urban WWTP.

The measures for pre-treatment of the sludge should be reflected in all projects for construction of new or reconstruction of the existing MWWTP.

5.3.11.5.2. Further application of recovery and disposal practices and construction of the necessary infrastructure

The implementation of the National programme for priority construction of urban WWTP is expected to increase the annual sewage sludge generation to about 250 000 tons dry solids. During the period of implementation of the National waste management programme the landfilling of pre-treated sludge will be the main possibility for disposal. It is necessary that other possible alternatives are considered such as using of sludge in agriculture and land restoration after the formulation of balanced waste management policy at national, regional and local level.

Landfilling of sludge

The present sludge disposal practices cannot be accepted as a long-term option. For the period of implementation of the NWMP it should be ensured that the sludges are deposited on landfills that meet the requirements of the national legislation and Directive 1999/31/EC on landfill of waste as well as that the sludges going to landfills shall be pre-treated.

This can be achieved by ensuring sufficient capacity of the regional landfills that are under construction where the sludges should be disposed together with municipal waste or by construction of new landfills by the operators of urban WWTP. In the regions where landfills are constructed and they meet the legal requirements, disposal of sludge in other facilities will not be allowed.

Use of sewage sludge in agriculture

Despite the fact that the using of sludge in agriculture is not a widespread practice in Bulgaria this option has great potential and can be alternative to the landfilling. Nevertheless the spreading of sludge on soils should be carried out by observation of series of restrictions related to limit values for heavy metals and other pollutants contained in soils and sludge, type of the cultivated crops etc.

The program considers the possibility for using of pre-treated/stabilized sludge in agriculture after application of one ore more of the following "conventional" methods:

- anaerobic digestion at high temperature (35^{o} C) for a period of at least 15 days;
- treatment with lime in order to achieve pH $\geq$ 12 for a period of at least 24 hours;
- continuous aeration at ambient temperature for an appropriate period of time (per each batch);
- continuous storage in liquid form at ambient temperature for an appropriate period of time (per each batch) .

The using of sludge in agriculture requires submission of detailed information about the quality of the sludge by the MWWTP operators to the farmers.

At the same time the operators of WWTP and the control authorities (RIEW) should exercise control of the industry for reduction of the quantity of pollutants discharged in the sewage systems to the minimum. The industrial enterprises should obligatory separate and treat the polluted water flows and have to put efforts for introduction of new cleaner technologies.

Use of sewage sludge in land restoration and rehabilitation

The using of WWTP sludge in restoration and rehabilitation of damaged lands is well known option in the world practice. Spreading of large quantity organic substances contained in the sludge may be useful for restoration of the lands and soils affected by the extraction of natural resources, abandoned quarries, landfills etc. In case that the restored lands will not to be used for agricultural purposes, the

requirements for the quality of the sludge may be reduced comparing to the requirements applied for using of sludge in agriculture.

5.3.11.5.3. Reduction of heavy metals content in the sludge

During the period of implementation of the NWMP, the competent authorities and operators of WWTP have to undertake necessary measures for reduction of the heavy metals contained in the sludge. These measures shall include:

- introduction of compulsory periodical measurement of the composition and the quantity of the sludge;
- strengthening of the control over the observation of the requirements for treatment of the wastewater in the industrial enterprises, including application of individual emission values;
- introduction of differential prices for discharge of wastewater in the sewage system depending on the content of hazardous substances in the wastewater.

The main purpose of the proposed measures is to guarantee that the pollution levels will not increase with the economical growth.

5.3.11.5.4. Strengthening of the administrative capacity of the competent authorities, establishment and implementation of procedures for control and enforcement of the legislation

The strengthening of the administrative capacity of the competent authorities by provision of the necessary qualified personnel and technical equipment is a necessary condition for exercise of adequate control of the generation and management of WWTP sludge. At the same time the planned amendments of the legislation should specify the obligations of different institutions – MOEW and MAF, as well as in the municipal administrations regarding the activities with sludge and the issuance of permits for using of sludge in agriculture. The elaboration and implementation of detailed procedures and instructions for permit issuance, documentation, reporting, periodical inspections, imposing of sanctions, monitoring and control of the activities with sludge should assist the competent authorities and MWWTP operators in achievement of compliance with the legal requirements.

5.3.11.6. Packaging waste

Packing process plays a substantial role in the contemporary production and marketing of various goods and is related to generation of considerable waste amounts at households, commerce, administration and industry. The objectives and the measures in the field of packaging and packaging waste set by the present NWMP are in compliance with the *Implementation program of Directive 94/62/EC on packaging and packaging waste* approved in 2003.

The implementation of the NWMP is based on the principles described below:

- responsibility of the producers and importers of packaging and packaging goods for the achievement of the targets for recycling and recovery set in §9 of the Waste Management Act;
- shared responsibility of the municipalities for the organization of the separate collection of packaging waste on their territory;
- application of the hierarchy of the methods for waste management:

1. encouraging the prevention of packaging waste generation including decrease of the content of hazardous substances in the packaging;
2. increasing the percentage of the reused packaging;
3. achievement of higher levels of packaging waste recovery by giving a priority to the recycling comparing to the other methods of recovery.

- opportunity for volunteer collective implementation of the obligations arising by the legislation by the side of all economic operators concerned;
- encouraging the participation of the public;
- dialog with the industry and the public sector;
- effectiveness of the proposed decisions for collection and recovery of packaging waste;
- access to information for all interested parties;
- adequate, preventive sanctions against the economic operators that violate the legal requirements, including non-attainment of the recovery and recycling targets.

The harmonization of the national legislation with the requirements of Directive 94/62/EC and the introduction of the above mentioned principles will be provided by the adoption of the *Regulation on packaging and packaging waste*. The subsequent update of the municipal regulations and the waste management programs will allow the implementation of the harmonized legislation at local level.

The major priorities, related to the legislative, administrative, organizational, technical and financial measures ensuring the National program implementation are described below.

5.3.11.6.1. Prevention and re-use

The prevention of the packaging waste generation is main priority of the national policy in the field of management of the packaging waste. The program envisages keeping the quantities per capita packaging waste generated within the limits of this indicator in the EU states by the end of 2007.

The achievement of the target should be carried out in the context of the planning increase of the quantities of the packaging waste generated as a result of the expected economic growth of the industry and the services as well as a result of the increase of the population incomes.

The state administration shall continue to encourage the implementation of measures in the field of prevention and reuse and special attention will be paid to:

- enlarging the market of packaging for reuse;
- enlarging the scope of the voluntary deposit schemes for glass packaging.

5.3.11.6.2. Increase of the quantities of the recovered and recycled packaging waste

According to the *Implementation program of Directive 94/62/EC on packaging and packaging waste* the targets for recovery and recycling of packaging waste set in Art. 6 (1) of the Directive should be achieved by 2011 as follows:

- not less than 50 % by weight of the packaging waste generated will be recovered;
- not less than 25 % by weight of the totality of packaging materials contained in packaging waste will be recycled with a minimum of 15 % by weight for each packaging material.

During the period of implementation of the present Program the following intermediate target should be achieved:

Year	Recovery [% by weight]	Recycling [% by weight]
2004	20	20
2005	25	25
2006	32	25
2007	39	25

For achievement of the targets the Programme envisages introduction of organized systems for separate collection of packaging waste in the municipalities and the following number of population should be involved:

Year	Population Included [thous. inhabitants]
2003	-
2004	300
2005	600
2006	1200
2007	2400

The municipal administrations are responsible for organization of separate collection of packaging waste from the households on their territory. The Program envisages that the financing of the municipal projects for establishment of system for separate collection of the packaging waste will be provided by:

- funds raised in EMEPA from the product charges;
- contracts with recovery organizations.

It is assumed that the producers and the importers of packed goods will establish in short terms at least one Collective Scheme for fulfilment of their obligations for recovery and recycling of packaging waste, which will be represented by recovery organization. The main role of the organization will be to ensure financial flow to the municipalities in order to support the separate collection and recovery of the waste, through a system of fees, paid by the producers and importers of packed goods.

The producers and the importers of packed goods fulfilling independently their obligations for recycling and recovery shall be obliged to take back the packaging placed by them on the market. This obligation shall be also valid for their distributors including the sellers to the end users.

The consumers and distributors may return the used packaging, that are not marked with the trade mark of recovery organization, to the seller or the supplier from whom they have purchased the packed good without paying any charges or other compensations. They can return the waste at all trade places hold by one person where packed goods of the same type are sold.

The producers and distributors of packed goods may, independently or together with other producers and distributors, organize deposit systems for the packaging placed on the market by them.

5.3.11.6.3. Compliance of the packaging released at the market with the legal requirements

The implementation program envisages that the achievement of compliance with the requirements for maximum limit values of heavy metals in the packaging according to Art. 11 from the Directive 94/62/EC and the introduction of practices for adequate monitoring will be carried out within the following deadlines:

- 600 ppm from 01.01.2005 to 31.12.2005;
- 250 ppm from 01.01.2006 to 31.12.2006;
- 100 ppm from 01.01.2007.

The adoption of national standards corresponding to the harmonized European standards (CEN)[7] is necessary condition and it could support the Bulgarian producers of packaging, packaging materials and packed goods to implement the requirements of the legislation.

5.3.11.6.4. Provision of sufficient and reliable data for the packaging and packaging waste

In accordance with the draft *Regulation on packaging and packaging waste*, the National statistical institute provides information on the quantities of the packaging put on the market through statistics surveys. Custom Agency provides data on the quantities of imported and exported full and empty packaging. The plants for recycling and recovery of packaging waste report the quantities recycled and recovered packaging waste. EEA generalizes the received information and provides the necessary data for achievement of the targets for recycling and recovery at national level needed for reporting to the Minister of environment and water and to the European Commission following the form set in Directive 94/62/EC on packaging and packaging waste.

Producers and importers of packaged goods and those who carry out activities with packaging waste should keep report books and provide to the competent authorities information about the type and quantities of the packaging put on the market in Republic of Bulgaria as well as about the quantities of separate collected, recycled and recovered packaging waste.

The NWMP envisages:

- introduction of information systems for packaging and packaging waste till 1.01.2004;
- inclusion of the re-used packaging in the information system for packaging and packaging waste after 1.01.2005;
- surveys for the quantity and contents of the municipal waste generated in settlements with population above 20 000 inhabitants as well as the percentage of the packaging waste in the total waste stream.

5.3.11.6.5. Strengthening the administrative capacity

The effective control over the enforcement of the legal provisions by state and municipal administrations requires provision of sufficient human resources and equipment. For the implementation of the program, establishment of a proper administrative structure is envisaged, which includes:

- appointment of additional personnel in MOEW, EEA, RIEW and the rest of the state institutions engaged with the packaging and packaging waste;
- appointment of additional personnel in EMEPA and development of the necessary procedures for spending and control of the funds from product charges;

[7] prEN13427 and the related standards are in process of preparation and approval by the European Committee for Standardization

- appointment of additional personnel in the municipalities in accordance with the needs and the possibilities of the relevant municipal administrations;
- drawing up of a training program for the state administration and the municipalities regarding the requirements of the legislation and its implementation.

5.3.11.6.6. Involvement of public to take part in the separate waste collection system and increasing of the public awareness

Keeping the public informed and making the activities for separate waste collection popular are the key elements for the implementation of the national policy in the field of packaging waste. The following activities are envisaged:

- organization of information campaigns for :

- involvement of the public to take part in separate collection system and deposit systems;

- producers of packaging and packaging materials concerning the legal requirements;

- development and implementation of training program for the issues of waste recycling directed towards the schools;
- publishing and distribution of information materials.

5.3.11.7. Health care waste

The primary purpose of hospitals is to provide quality healthcare services to the population of Bulgaria and the health care waste management must be considered in this context. The reduction of the risks to the patients, medical staff, waste collection workers and the public as a whole, arising from management of the infectious and other hazardous health care waste and other hazardous waste from hospitals is of high priority of the National Programme.

5.3.11.7.1. Establishment of efficient system for treatment of the health care waste

The landfilling of infectious waste is prohibited by the national legislation in compliance with Article 5 paragraph 3.c of Directive 1999/31/EC. Nevertheless, considerable percentage of the waste generated by the human medicine is still landfilled on the existing municipal landfills, together with municipal waste.

The establishment of an effective system of facilities and installations for treatment and disposal of the waste from the healthcare establishments during the period of implementation of the Programme should ensure the implementation of higher standards for protection of the human health and the environment. These facilities should have sufficient capacity for treatment of the whole waste generated and an optimal balance between the different methods for incineration, autoclaving and microwave disinfection has to be found.

Autoclaving and microwave disinfection as a whole are easier methods for operation and control, but there is a need for compulsory control of the microbiological efficiency of the technology. In accordance with the legal requirements, the products obtained from the treatment should be tested for existence of life micro organisms according to the requirements of the competent authorities. The technologies that are approved for use and that are of wide spread application will be preferred.

In compliance with the *National Hospital Waste Management Plan* approved in 2002, the present program envisages the construction of facilities on regional principle. During the period of validity of the Programme, the construction of six facilities for disinfecting of waste will be of high priority, which together with the existing incinerators in Sofia will ensure treatment of all waste generated by the healthcare establishments. At the same time during the period of implementation of the Programme it is foreseen that three regional incinerators in Plovdiv, Varna and Pleven will be constructed.

The construction of the above mentioned facilities will allow closure of the existing installations for incineration of the waste from the healthcare establishments which are not in compliance with the requirements of the national legislation by the end of 2005.

5.3.11.7. 2. Reduction of the health risks to the patients and the hospital staff caused by the waste generation, storage and treatment

In compliance with the recommendation of the World Health Organization: "it is essential that everyone engaged in the healthcare should understand that the management of the waste from human medicine is an integral part of healthcare, and that the risks arising from the inadequate management of this waste reduces the overall benefits of health care".[8]

Hospitals are responsible for the safe management of hospital wastes. This requires establishment and implementation of appropriate regulations for separate collection, supply of containers for collection and premises for safe storage of the waste. The staff, engaged with waste collection, transportation and disposal have to be familiar with the risks of handling infectious and other hazardous waste generated by the healthcare establishments and their safe management.

Together with the limitation of the risks to the health of the patients, stuff, visitors and to the environment, the proposed solutions for waste management have to be in compliance with the available financial resources.

The competent authorities – Ministry of health and respective Hygiene Epidemiological Inspectorates have to ensure effective control over the management of health care waste.

8 Department of Protection of the Human Environment, WHO

CHAPTER VI. ACTION PLAN

The proposed Action plan covers the period 2003-2007 and includes the major measures and activities envisaged for the implementation of the objectives set by the Programme. The structure of the Action plan is in compliance with the objectives and priorities specified in Chapter V of the Programme.

By the adoption and the implementation of the present plan, it is aimed that optimal balance between the different legislative, institutional, economic and technical measures and application of integrated waste management will be achieved. The plan determinates also the responsibilities of the different institutions and organizations in the waste management field in relation to the realization of the proposed activities, the expected costs and the probable sources of funding.

№	**Measure/action**	**Deadline (start-end)**	**Responsible institution**	**Cost estimation** [thous. BGN]	**Proposed sources of funding**
Objective 1	**PREVENTION AND MINIMIZATION OF THE WASTE GENERATION**				
1.1.	Introduction of general legal obligations for waste producers to prevent/reduce wastes where it is technical and economical feasible.	31.12.2004	MOEW	-	-
1.2	Setting of conditions for prevention of waste generation through the issuance of integrated prevention and pollution control permits	permanent	MOEW, EEA, RIEW	-	-
1.2.1.	Acceptance of schedule for application for issuance of IPPC permits	31.06.2003	MOEW, EEA	-	-
1.2.2.	Development of methodologies for application of best available techniques	31.12.2005	MOEW, EEA		
1.2.3.	Issuing of IPPC permits, according to the schedule taking into account BAT	permanent	MOEW, EEA, RIEW	-	-
1.3.	Encouraging the companies implementing eco-management systems (EMAS, ISO 14000)	31.12.2004	MOEW,EEA	-	-
1.4.	Revision of the procedures for determination of municipal waste fees depending on the quantities of waste generated	30.06.2005	Municipalities	-	-

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
1.5.	Introduction of restrictions for the dangerous substances contained in products that after use generate wide spread waste and application of differential pricing for disposal of the waste	01.01.2004 – 31.12.2007	MOEW, RIEW	-	-
1.6.	Application of differential pricing for disposal of the waste depending on the content of dangerous substances	Permanent	Operators of disposal installation	-	-
1.7.	Development of indicators for supervision of the waste prevention and adoption of these indicators into the national waste information system	31.12.2005	EEA, NSI	-	-
1.8.	Training on implementation of "cleaner technology" in the industry	31.12.2007	BIA, Industrial associations	250	Industry, external financing
Objective 2	**INCREASE OF THE QUANTITIES RECOVERED AND RECYCLED WASTE**				
2.1.	Introduction of legislative limits and prohibitions for the landfilling of specific waste streams (e.g. biodegradable wastes, used tyres, etc.)	31.12.2004	MOEW	-	-
2.2.	Introduction of schemes for separate collection of waste for recovery and recycling of packaging waste, batteries and accumulators, waste oils, etc.	permanent	Municipalities, Industry		
2.3.	Adaptation of the facilities and installations for recycling/recovery of waste in compliance with the legal environmental protection requirements	31.12.2007	Industry	In accordance with the waste management programs of the companies	Companies recycling/ recovering waste
2.4.	Studying of the possibilities for recycling of waste in the construction industry and for the production of construction materials	30.09.2005	Industry, MRDPW, MOEW	25	EMEPA
2.5.	Construction of installations for recovery of construction and demolition waste	31.12.2007	Municipalities, Regional administrations	In accordance with the Investment	EMEPA, private investments

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
				program	
2.6.	Studying of the possibilities for introduction of tax concessions and additional incentives for the companies recycling waste.	31.12.2004	MF, MOEW	-	-
2.7.	Setting of waste recycling and recovering targets for wide spread waste	31.12.2005	MOEW	-	-
2.8.	Introduction of requirements and procedures for application of separation at the source, separate collection and transportation of recyclables (including biodegradable) materials from municipal waste flow into the waste management programmes, and in contracts for rendering of municipal waste collection services	01.01.2004 - permanent	municipalities, companies	-	-
2.9.	Supporting the construction of additional capacity for waste recovery and reconstruction of the existing installations (for plastic, paper, cardboard, glass waste, end-of-life vehicles, spent accumulators, used tyres, used oils)	permanent	industry, EMEPA	In accordance with the waste management programs of the companies 4 000 /year for free of interest loans	Private investments, EMEPA
2.10.	Construction of installations for treatment of wood and vegetable waste	permanent	Industry	3000	Private investments, loans from EMEPA
2.10.1.	Introduction of measures for promoting the use of briquettes from wood waste for heating in the households and public buildings	31.12.2005	MLSP, MEER, MOEW	-	-
2.11.	Restrictions on the import of waste for recycling in cases when the available capacities are not sufficient for the waste	permanent	MOEW	-	-

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
	generated in the country				
2.12.	Investigation of the possibilities for co-incineration of waste in the existing cement plants	31.12.2004	Industry	-	cement plants
2.13.	Reconstruction of the existing cement kilns for co-incineration of waste in accordance with the legal requirements and obtaining of necessary permits	31.12.2005	Industry		cement plants
2.14.	Introduction of incentives for production of heat/electricity from waste incineration facilities and from installations using waste as an alternative fuel	31.12.2005	MEER, Energy Efficiency Agency, MF, MOEW	-	-
2.14.	Separate collection of paper and cardboard waste in state institutions	31.12.2003	MOEW	22	EMEPA
Objective 3	**IMPROVEMENT OF SEPARATION, TEMPORARY STORAGE, COLLECTION AND TRANSPORTATION SYSTEM**				
3.1.	Improvement of the present practices and conditions for municipal waste collection and transportation (supply of new containers and specialized transport vehicles) Enlargement of the organized municipal waste collection systems covering all settlements in the country.	permanent	municipalities	114 000 (including 53 000 loans from EMEPA)	Municipal budgets, private investments, loans from EMEPA
3.2.	Development of guidelines for determination of necessary number and type of collection containers and transportation vehicles for municipal wastes	30.06.2004	MOEW, MF	10	EMEPA
3.3.	Development of guidelines for waste classification	31.12.2005	MOEW, MH	-	-
3.4.	Establishment of systems for collection of wide spread hazardous household waste (luminescent lamps, batteries, accumulators, used oils, waste electrical and electronic equipment etc.)	permanent	Producers and importers of products, Municipalities	In accordance with the municipal waste management programs	Municipal budgets, private investments, loans from EMEPA

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
3.5.	Establishment of municipal schemes for collection of construction and demolition waste	30.06.2004-31.12.2007	Municipalities	In accordance with the municipal waste management programs	Municipal budgets, private investments
Objective 4	**ENVIRONMENTALLY SOUND FINAL DISPOSAL**				
4.1.	Adaptation into compliance or closure of all existing landfills that do not meet the legal requirements in force	permanent	operators, RIEW for the control of the implementation		
4.1.1.	Development of conditioning plans for adaptation into compliance with the legal requirements or closure for all existing landfills and approval of these plans by the competent authorities	30.06.2004	Operators, Municipalities		Landfills operators
4.1.2.	Collection of data and feeding of the register for the existing landfills including assessment of the risks to the environment and human health	31.12.2004	EEA, RIEW, municipalities, landfills operators	350	EMEPA, foreign source
4.1.3.	Gradual closure of all existing landfills that do not meet the present legal requirements		operators, RIEW for control of the implementation		Landfills operators
	▪ landfills for hazardous waste	31.12.2006	Municipalities, operators	In accordance with the companies waste management programs	Municipalities
	▪ landfills for non-hazardous waste	16.07.2009	operators	34 423 (for municipal	Landfills operators

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
				landfills), for industrial non-hazardous waste – in accordance with the companies waste management programmes	
	▪ landfills included in Annex 1 of the Waste Management Act, which are not closed till the deadline for non-hazardous waste and are not in compliance with the legal requirements in regard to the prohibition of landfilling of liquid waste, wastes that in the conditions of landfill are corrosive and oxidizing, as well as the requirements for prevention of surface water from entering into the landfilled waste	31.12.2014	operators	In accordance with companies waste management programs	Landfills operators
4.2.	Strengthening of the control over the implementation of requirements for waste landfilling, incl. The requirements for monitoring and imposing of adequate sanctions against landfill operators, who violate the requirements for construction and operation	permanent	RIEW, EEA	-	-
4.3.	Introduction of penalty provisions for non-fulfilment and delay in the implementation of waste management programmes	31.12.2003	MOEW	-	-
4.4.	Strengthening of the control over abandonment, uncontrolled dumping and incineration of waste or other methods of uncontrolled waste disposal	permanent	Municipalities, RIEW		Municipal budgets, incomes from penalties
4.5.	Gradual construction of network of 54 regional municipal waste landfills with a sufficient capacities for disposal of the whole municipal waste quantity generated in the country, incl.	17.07.2009	Municipalities, regional administrations	273 063 (for the period 2003-2007 г.)	In accordance with the investment program

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
	construction of cells for landfilling of hazardous waste at the regional landfills for the regions Rouse and Sevlievo				
4.6.	Reconstruction of the existing landfills at the enterprises and construction of new landfills within the deadlines set in the conditioning plans for adapting into compliance with the legal requirements	16.07.2009	operators		industry, landfills operators
4.7.	Adaptation into compliance or closure of all existing waste incinerators which do not fulfil the present legal requirements	31.12.2006	operators		Incinerators operators
4.7.1.	Drawing up of projects for reconstruction/closure of all existing installations for incineration of waste	31.12.2004	operators, RIEW for the control on the implementation		Incinerators operators
4.8.	Construction of National hazardous waste disposal centre and infrastructure for hazardous waste landfilling	31.12.2008	MOEW	87 296 (for the period 2004-2007 г.)	foreign source, state budget
4.9.	Identification of all companies that have to obtain permits for carrying out of waste management activities	31.12.2004	RIEW, EEA	-	-
4.10.	Issuing of permits for waste activities and control of the implementation of conditions set in the issued permits. Feeding up of the register for issued permits for waste management activities.	permanent	RIEW, MOEW		Industry through the fees paid for issuance of permits
4.11.	Training of the inspectors issuing permits and controlling waste activities	permanent	MOEW	20 per year	EMEPA, state budget
4.12.	Development of National strategy for the reduction of biodegradable waste going to landfills	31.12.2004	MOEW	100	external financing, EMEPA

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
4.13.	Development of guideline for waste composting and pre-treatment prior landfilling	30.06.2006	MOEW	30	EMEPA, external financing
4.14.	Realization of pilot projects for home composting	permanent	Municipalities	3120	Municipal budgets, loans from EMEPA
4.15.	Construction of facilities for composting and pre-treatment of biodegradable wastes	permanent	Municipalities	19095	ISPA, state budget
Objective 5	**ELIMINATION AND MINIMIZATION OF THE RISK FROM PAST WASTE CONTAMINATIONS**				
5.1.	Identification of all closed landfills and past contaminations and completion of missing data in the register for waste landfills and past waste contaminations	31.12.2005	Municipalities, RIEW, EEA		EMEPA, municipal budgets, landfills operators
5.2.	Evaluation of the necessary financial funds and making of proposals for sources of financing for cleaning the polluted sites with waste	31.12.2003	Municipalities, RIEW		Municipal budgets, landfills operators
5.3.	Update of the municipal waste management programs with financing plans for the rehabilitation/sanitation of the old landfills and dumpsites	30.09.2004	Municipalities		Municipal budgets
5.4.	Cleaning up of sites polluted with non-hazardous waste and rehabilitation of the closed/abandonment municipal waste landfills	16.07.2009	Municipalities	35 000 (19 250 for the period 2003-2007 г.)	State budget, municipal budgets
5.5.	Reduction of the risk of past waste contaminations, including implementation of the programs for elimination of past environmental damages after the privatization of industrial enterprises	permanent	MOEW, MF, PA	54 000	State budget
5.6.	Exercising of efficient control over the fulfilment of the requirements for closure of the landfills, operated by the enterprises and the implementation of the measures envisaged in the conditioning plans for adaptation with the legal	31.12.2003 - permanent	RIEW		State budget

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
	requirements				
5.7.	Improvement of the conditions for storage of preparations for plant protection whose date of appropriate use is expired (obsolete pesticides)	permanent	MAF, SACP MOEW	24300	State budget, EMEPA
Objective 6	**LEGAL REGULATION OF THE WASTE MANAGEMENT AND SPEEDING UP OF THE IMPLEMENTATION OF THE LEGISLATION AND THE POLICY IN THE FIELD**				
6.1.	Transposition of EC directives and decisions in the field of waste management into the national legislation	permanent	MOEW		
6.1.1.	Adoption of Regulation on packaging and packaging waste in accordance with the Directive 94/62/EC on packaging and packaging waste	31.12.2003	MOEW	-	-
6.1.2.	Adoption of Regulation on the classification of waste in accordance with the Commission Decision 2000/532/EC and its subsequent amendments	31.12.2003	MOEW, MH		
6.1.3.	Adoption of Regulation on the disposal of PCBs/PCTs in accordance with the Directive 96/59/EC	30.12.2004	MOEW	-	-
6.1.4.	Adoption of Regulation on the requirements for the treatment and transportation of waste oils and waste oil containing products, in accordance with the Directive 75/439/EC on disposal of waste oils	30.12.2004	MOEW		
6.1.5.	Adoption of Regulation on the documentation and reporting of the waste management activities	30.06.2004	MOEW, EEA	10	external financing
6.1.6.	Drawing up and adoption of a Regulation on treatment and transportation of waste from the titanium dioxide industry in accordance with the Directives 78/176/EC, 82/883/EC and 92/112/EC on waste from the titanium dioxide industry	30.12.2004	MOEW	10	EMEPA

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
6.1.7.	Adoption of Regulation on waste incineration in compliance with the Directive 2000/76/EC on incineration of waste	30.12.2004	MOEW	10	EMEPA
6.1.8.	Adoption of Regulation on the conditions and requirements for construction and operation of waste landfills in accordance with the Directive 1999/31/EC on the landfill of waste	30.06.2004	MOEW, MH, MRDPW	-	-
6.1.9.	Adoption of Regulation on the treatment and transportation of industrial and hazardous waste in accordance with the Directive 91/689/EC on the hazardous waste	30.09.2004	MOEW, ME	-	-
6.1.10.	Adoption of Regulation on the requirements for the use of sludges from waste water treatment plants in agriculture in accordance with the Directive 86/278/EC on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture	30.09.2004	MOEW, MA	-	-
6.1.11.	Adoption of regulation on the requirements for putting into market of batteries and accumulators and for treatment and transportation of spent batteries and accumulators in accordance with the Directive 91/157/EC on batteries and accumulators containing certain dangerous substances	30.06.2004	MOEW, ME	-	-
6.1.12.	Adoption of regulation on the conditions and procedures for reduction of the pollution caused by the waste from motor vehicles in accordance with the Directive 2000/53/EC on end-of-life vehicles	30.09.2004	MOEW, MTC	-	-
6.1.13.	Drawing up and adoption of regulation on waste from electrical and electronic equipment	31.12.2005	MOEW, ME	-	-
6.1.14.	Development and adoption of regulation on the order and procedures for importation, exportation and transit of waste in accordance with Regulation 259/93	30.06.2005	MOEW, Custom Agency	-	-
6.2.	Adoption of national legislation corresponding to the new Directives that will be adopted after 2003 within the transposition periods applicable for the Member states	permanent	MOEW	-	-

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
6.3.	Amendments to the Municipal Budgets Act in order to establish general rules for spending of funds raised by the municipal waste fees	30.06.2005	MF	-	-
6.4.	Amendment of the respective municipal regulations on collection, storage, transportation of municipal, construction and wide spread waste in accordance with the goals and the requirements of the national legislation	30.9.2004	Municipalities	-	Municipal budgets
6.5.	Elaboration of guidelines for development of waste management programs	30.07.2004	MOEW		external financing
6.6.	Elaboration of guidelines for implementation of European waste management legislation on local level	31.01.2003	MOEW, NAMRB		external financing
6.7.	Revision of the municipal waste management programs	30.09.2004	Municipalities	-	Municipal budgets
6.8.	Development and approval of methodology for estimating and forecasting of the quantity and the morphological content of the municipal waste	30.06.2005	Municipalities, MOEW	20	EMEPA, Municipal budgets
6.9.	Revision of the regional development plans in relation to the establishment of regional waste treatment/disposal facilities and implementation of other regional initiatives in the waste management field	31.12.2004	Regional administrations	-	-
6.10.	Adoption of Bulgarian standards for taking of samples and waste characterization	permanent	BIS , MH, MOEW	50	State budget
6.11.	Introduction of fees for issuing of permits, covering the full costs for the competent authorities in relation to the issuing of the permit, periodic inspections, monitoring and control of the waste disposal installations	30.09.2004	MOEW	-	-
6.12.	Development of guidelines for the procedures and rules for monitoring and inspection of sites generating waste, the persons that carry out waste management activities and the waste recovery and disposal installations/facilities	31.12.2005	MOEW	50	EMEPA

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
6.13.	Development of a guidelines for determination of the municipal waste fee including the differentiation of tariffs for different waste management activities, methods and services (e.g. separate comparing to mixed waste collection)	31.12.2005	MOEW, MF	20	EMEPA
6.14.	Elaboration of programs for implementation of Directives 1999/31/EC, 94/62/EC and 2000/53/EC	30.04.2003	MOEW	45	State budget
6.15.	Elaboration of Regulation on the conditions and the order for delivering and acceptance of waste, generated from shipping activities and ship cargo in accordance with the Directive 2000/59/EC	30.12.2004	EAMA,EAPA MTC		
Objective 7	**PROVISION OF SUFFICIENT AND RELIABLE DATA ON WASTE**				
7.1.	Optimization of the national information system on waste and related procedures for classifying, collecting, processing and disseminating of the data and information on the sources, type, quantities and activities for management of waste and the state of waste treatment and disposal facilities	31.12.2004	EEA, NSI	-	-
7.2.	Development and installation of software products for processing of the annual reports according to waste types, the report cards for delivering, accepting and transportation of hazardous waste, the register for landfills and past contaminations, etc., ensuring the work of the information system at EEA and RIEW	31.12.2005	EEA	100	External financing, EMEPA
7.3.	Introduction of requirements, procedures and the relevant software products and technical equipment allowing the transition to submission and processing of data in electronic form	31.12.2005	EEA, RIEW	80	EMEPA
7.4.	Upgrade and maintenance of the software for the register of the waste permits and registration documents for waste activities	permanent	MOEW, RIEW	20	EMEPA

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
7.5.	Integration of the results from the monitoring of waste recovery/disposal installations and the data about the inspections, drawing up of the penalty statements and the imposed penalties in the national information system for waste	31.12.2005	EEA, RIEW	-	-
7.6.	Inclusion of the information for the products that after waste generate wide spread waste (such as packaging, lubricating oils, batteries and accumulators, tyres, motor vehicles, etc.) in the information system for waste	31.12.2004	EEA, NSI, AC	80	EMEPA
7.7.	Introduction of procedures for collection and processing of the information and drawing up of the reports to the international and European institutions in relation to the fulfilment of the obligations under the international agreements in the waste management field (Secretariat of the Basel Convention, European Commission, European Environmental Agency, Eurostat)	permanent	EEA, RIEW, NSI	-	-
Objective 8	**STRENGTHENING OF THE ADMINISTRATIVE CAPACITY OF THE INSTITUTIONS RESPOSNIBLE FOR THE MANAGEMENT OF THE WASTE**				
8.1.	Setting up of the national laboratory system for waste, incl. supply of the necessary equipment, training of personnel and authorization of the laboratories	30.06.2003 – 30.06.2005	EEA, NCHMEN	2550	External financing, EMEPA
8.2.	Training of the experts of the Regional Inspections for carrying out of inspections, issuing of permits and implementation of the waste management legislation	permanent	MOEW	10 (per year form MOEW budget)	State budget, external financing
8.3.	Exercising of control over the implementation of the conditions set in the issued permits and the implementation of the waste management programs, incl. periodical inspections of waste management sites and waste treatment facilities	permanent	RIEW	400	State budget (MOEW)
8.4.	Strengthening of the administrative capacities of the municipal authorities for control of the cleanness of the settlements, incl. appointment of additional personnel	permanent	Municipalities		Municipal budgets

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
8.5.	Training of the experts of the municipalities, engaged in the implementation of the waste management legislation	permanent	Municipalities MOEW	40 (per year)	EMEPA, external financing
8.6.	Appointment of additional personnel at the competent authorities, as follows:	30.06.2003 – 31.12.2004			State budget
	▪ MOEW – additional 9 experts	31.12.2003	MOEW, MF	90 (per year)	State budget
	▪ EEA – additional 5 experts	31.12.2005	MOEW, MF	50 (per year)	State budget
	▪ RIEW – additional 45 experts	31.12.2003	MOEW, MF	450 (per year)	State budget
	▪ NSI - additional 1 expert	31.12.2004	NSI, MF	10 (per year)	State budget
	▪ MH – additional 1 expert	31.12.2004	MH, MF	10 (per year)	State budget
	▪ Customs Agency – additional 1 expert	31.12.2004	MF	10 (per year)	State budget
8.7.	Providing the functioning of the competent authorities with the necessary technical equipment	permanent	MOEW, EEA, RIEW, other institutions	450 (per year)	State budget, external financing
8.8	Drawing up of PHARE project fiche for "Strengthening of the administrative capacity of MOEW, RIEW and Customs Agency for implementation and enforcement of the requirements of Regulation (EEC) 259/93 on the supervision and control of the transfrontier shipment of waste within, into and out of the European Community and its presentation for approval by the European Commission	31.12.2003	MOEW		
8.9.	Supply of the necessary equipment for taking of samples, identification analyses for the laboratories in EAMA, MTC	30.12.2004	MTC	100	State budget
Objective 9	**INCREASING OF THE INVESTMENTS IN THE SECTOR AND IMPLEMENTATION OF THE "PRODUCER RESPONSIBILITY PRINCIPLE" AND "POLLUTER PAYS PRINCIPLE" IN INTEGRATED WASTE MANAGEMENT SYSTEM**				

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
9.1.	Optimization of the amount and the spending of the municipal waste fee and allotting of funds for covering the costs for waste collection and transportation, design, construction, operation, monitoring, closure and aftercare procedures of the landfills, implementation of separate collection of household hazardous waste and wide spread waste	permanent	Municipalities, landfills operators	-	Municipal budgets
9.2.	Revision of the criteria and the conditions for funding of waste management projects by EMEPA	31.12.2003	EMEPA	-	-
9.3.	Studying of the possibilities for introduction of additional charge for landfilling of waste types, for which there are available recovery facilities in the country	31.12.2005	MOEW, MF	-	-
9.4.	Establishment of requirements for financial security of landfill operators, covering the full costs for closure and aftercare procedures of the facilities	30.9.2004	MOEW	-	-
9.5.	Revision of the ISPA strategy in sector "Environment"	31.12.2003	MOEW	-	-
9.6.	Adoption of economic incentives and tax concessions for the municipalities and companies carrying out waste management activities	31.12.2005	MF, MOEW	-	-
Objective 10	**PUBLIC PARTICIPATION**				
10.1.	Prolongation of the campaign "For clean environment"	permanent	MOEW	520 (per year)	EMEPA
10.2.	Training of the managers and the environmentalists in the industrial enterprises for explanation of the waste management legislation	permanent	BIA, Industrial associations, MOEW		Private investments, EMEPA
10.3.	Setting up of National Information centre for waste problems at the EEA and improvement of the existing environment information centres at RIEW	31.12.2005	EEA	1000	External financing, EMEPA
10.4.	Inclusion of waste management issues in educational programmes in kinder gardens, schools and universities	15.9.2005	MES	-	-

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
10.5.	Publishing and dissemination of National Waste Management Program (in Bulgarian and in English language)	31.03.2005	MOEW	20	External financing, EMEPA
10.6.	Development and implementation of training programs for the National waste management program	31.12.2004	MOEW	25	EMEPA, external financing
10.7.	Publishing a brochure with the legislative acts in the field of waste management (in Bulgarian and English language)	31.03.2005	MOEW	20	EMEPA
10.8.	Provision of information for prevention and minimization of the waste generation and the potential benefits thereof to producers of goods and to the consumers and other waste generators	31.12.2004	MOEW	20	EMEPA
10.9.	Publishing of information materials on waste management issues	permanent	MOEW, EEA	25 (per year)	EMEPA, external financing
10.10.	Provision of information to the society on waste management issues in the frame of Bulgarian National communication strategy for integration to the EU	31.12.2004	MOEW	50	State budget, external financing
Objective.11	**MANAGEMENT OF SPECIFIC WASTE STREAMS IN COMPLIANCE WITH THE EU REQUIREMENTS**				
11.1.	*BATTERIES AND ACCUMULATORS*				
11.1.1.	Establishment of effective procedures for control of the implementation of legal requirements in the field of:	30.09.2004			
	▪ collection, storage, transportation of spent batteries and accumulators	30.09.2004	RIEW	-	-
	▪ compliance with the requirements for the content of heavy metals in batteries and accumulators placed on the market and for marking of batteries and accumulators and for the appliances with incorporated batteries and accumulators	30.09.2004	SAMTS	-	-
11.1.2.	Training of the personnel from the competent authorities (RIEWs, customs officers, SAMTS)	permanent	MOEW	10	EMEPA, External financing

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
11.1.3.	Development of national system for collection of lead-acid batteries and accumulators	31.12.2004	Industry, MOEW	200	Industry, External financing
11.1.4.	Improvement of the collection and transportation of spent lead-acid accumulators and providing of the necessary investments in collection infrastructure and specialized transport equipment and containers	permanent	Industry		Industry, EMEPA (product charges)
11.1.5.	Studying of the possibilities for introduction in the country of installations for recovery and disposal of non-lead batteries and accumulators and systems for their collection	31.12.2004	MOEW	30	EMEPA
11.1.6.	Implementation of pilot projects and campaigns for collection of small batteries in the municipalities	01.01.2004 – 31.12.2007	Municipalities	500	EMEPA (product charges)
11.1.7.	Implementation of national public awareness campaigns	01.01.2004 – 30.06.2005	MOEW, Producers and importers, municipalities	50	Producers and importers, EMEPA(product charges)
11.2	*END-OF-LIFE VEHICLES*				
11.2.1.	Improvement of the collection rate of the product charges for vehicles and revision of the mechanism for their collection	30.09.2004	EMEPA, MOEW, CA	-	-
11.2.2.	Organization of national meeting with mayors, importers of vehicles and competent authorities for the implementation of the Regulation and discussion of the proposed amendments of the legislation	permanent	MOEW, NAMRB	10	EMEPA
11.2.3.	Construction of municipal storage sites for end-of-life vehicles	permanent	Municipalities	9 500	EMEPA - for municipalities – as grants; - for private investors – as loans
11.2.4.	Organization of an information campaign for training of population, municipal administrations and economic operators,	31.12.2006	EMEPA	300	EMEPA

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
	incl. The operators of dismantling centres regarding the adequate carrying out of activities with of end-of-life vehicle				
11.2.5.	Organization of a tender procedure for assignment of the drawing up of the documentation for development of information system in MOEW for gathering of necessary information for monitoring and supervision of the process for achievement of the targets set in Directive 2000/53/EC	31.12.2003	MOEW	5	EMEPA
11.2.6.	Development and installation of information system including all responsible institutions engaged in implementation of the legislation on end-of-life vehicles and training for working with the information system	31.12.2004	EMEPA	500	EMEPA
11.2.7.	Organization of a tender procedure for assignment of the drawing up of the documentation for engineering of dismantling centre, incl. design, organization of the construction, building, supply and erection of installations and technical equipment and putting it into operation	31.12.2003	MOEW	9	EMEPA
11.2.8.	Construction of dismantling centres	30.06.2006	MOEW, EMEPA	20 000	EMEPA, private investments
11.3	*WASTE OILS*				
11.3.1.	Development and adoption of implementation programme for Directive 75/439/EEC on the disposal of waste oils	30.12.2004	MOEW	50	External financing
11.3.2.	Proposal for implementation of organized system for collection, regeneration and recovery of waste oils and oil products, incl. proposal for the sources of funding	30.09.2004	MOEW	20	External financing
11.3.3.	Introduction of product charges for the oils put on the market aiming to raise the necessary funds for the implementation of collection system	31.12.2004	MOEW	-	-
11.3.4.	Development and approval of technical guidelines for collection, storage and transportation of waste oils and oil products, incl. requirements towards the used equipment and facilities	31.12.2004	MOEW	50	External financing

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
11.3.5.	Gradual introduction of system for collection of waste oils and oil products	31.12.2006	Industry		Private investments, EMEPA (product fees)
11.3.6.	Introduction of specialized information system for monitoring of material flows of oils, waste oils and oil products, within the national waste information system	31.12.2004	MOEW, EEA	100	External financing
11.3.7.	Exercising of strict control for avoidance of uncontrolled burning and discharge of waste oils and oil products	permanent	RIEW	-	-
11.3.8.	Training of the specialists of the competent authorities and the companies dealing with waste oils	31.12.2004	MOEW	10	EMEPA External financing
11.3.9.	Adapting of the existing facilities for collection, storage, transportation, regeneration, recovery and disposal of waste oils and oil products in compliance with the legal requirements. Revision of the issued permits for activities with waste oils	31.12.2006	operators, RIEW		industry
11.3.10.	Preparation and organization of information campaigns oriented to the users of oils and to the holders of waste oils	31.12.2006	MOEW	50	EMEPA (product fees)
11.4.	*PCBs/PCTs*				
11.4.1.	Carrying out of the inventory of PCBs/PCTs contaminated equipment	30.06.2005	MOEW		External financing, EMEPA
11.4.2.	Elaboration of National plan for decontamination of PCBs/PCTs contaminated equipment and PCB containing waste in accordance with Directive 96/59/EC	31.12.2005	MOEW	-	-
11.4.3.	Control of PCBs/PCTs contaminated equipment in use and over the conditions for storage of dismantled equipment and PCBs/PCTs containing waste	permanent	RIEW	-	-

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
11.4.4.	Decontamination/disposal of PCB containing equipment and disposal of PCB containing waste	31.12.2010	Waste holders		Waste holders
11.4.5.	Adoption of Bulgarian standards for determination of PCB/PCT	31.12.2004	BIS, EEA		EMEPA
11.4.5.1	Authorization of laboratories at MOEW for analysis of PCB/PCT	31.12.2005	EEA	-	-
11.4.6.	Organization of information campaigns for PCB/PCT	31.12.2005	MOEW	30	EMEPA, external financing
11.4.7.	Organization of campaigns for collection of small appliances containing PCB	31.12.2006	Municipalities, MOEW	250	EMEPA
11.4.8.	Provision of the necessary storage sites for safe storage of PCB containing waste	after expatiation period	Industry		Industry
11.5.	*SEWAGE SLUDGE*				
11.5.1.	Provision of sufficient capacity for landfilling of sludges from WWTP including at the planning and construction of regional waste landfills	16.07.2009	Municipalities		State budget, ISPA, MWWTP operators
11.5.2.	Inclusion of the full amount of the costs for management of the sludge into the charges for services provided from Water Supply& Sewer Companies	31.12.2005	Operators, Municipalities	-	-
11.5.3.	Introduction of sustainable practices for use of sludge in agriculture and for restoration of damaged lands	31.12.2005	MAF	In accordance with the companies waste management programs	MWWTP operators

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
11.5.4.	Construction/reconstruction of the appropriate treatment and storage facilities on the territory of WWTP in accordance with the conditions set in the permits issued by the competent authorities	permanent	operators	In accordance with the companies waste management programs	External sources, MWWTP operators
11.5.5.	Strengthening of the control over the content of hazardous substances discharged into the sewer system	permanent	operators, RIEW, EEA	-	-
11.5.6.	Training of the competent authorities for issuing of permits to WWTP operators regarding methods for treatment, disposal and recovery of sludge	01.01.2004 – 30.06.2005	MOEW	50	EMEPA
11.5.7.	Training of the farmers in connection with the use of WWTP sewage sludge in agriculture	01.01.2005 – 30.06.2006	MAF		SAF
11.6.	*PACKAGING AND PACKAGING WASTE*				
11.6.1.	Introduction of product charges for packaging put on the market and determination of the order for their spending	01.01.2004	MOEW	-	-
11.6.2.	Establishment, registration and obtaining of permission for the activities of the Recovery Organization (RO)	31.12.2004	Industry, BAPE	-	-
11.6.3.	Survey of the quantity and the content of the generated municipal solid waste and the percentage of the packaging. The scope of the survey should be representative for the settlements with population above 20 000 inhabitants.	31.12.2004	BAPE	50	BAPE
11.6.4.	Drawing up of guidelines for contracting between the RO and the municipalities	30.6.2004	Municipalities, RO	-	-
11.6.5.	Negotiating the requirements for quality of sorted waste	31.12.2004	RO, producers, Municipalities	-	-

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
11.6.6.	Gradual introduction of separate collection in accordance with the program objectives and the permit for activity of RO	permanent	RO, pilot municipalities	In accordance with the investment program	RO, EMEPA
11.6.7.	Determination of recommendable requirements towards the centres for collection and buying back of packaging waste	31.12.2004	MOEW	10	EMEPA
11.6.8.	Adaptation into compliance of the existing facilities with the environmental legislation (IPPC, Waste Management Act Clean Air Act, Waters Act)	31.12.2006	Operators of recycling facilities	In accordance with the companies waste management programs	Operators of recycling facilities
11.6.9.	Information campaigns for the producers of packaging and packaging materials regarding the requirements of the national legislation and Directive 94/62/EC	Permanent	MOEW, BIA, BCCI	100	EMEPA
11.6.10.	Stopping the putting on the market of packed goods that do not meet the requirements for content of heavy metals exceeding:		Producers and importers of packaging and packaging materials	In accordance with the companies waste management programs	Industry
	- 600 ppm	01.01.2005 - 31.12.2005			
	-250 ppm	01.01.2006- 31.12.2006			
	- 100 ppm	from 01.01.2007			
11.6.11.	Adoption of national standards in the field of packaging and packaging waste identical to the harmonized European standards in force	31.01.2005	BIS, MOEW	80	EMEPA

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
11.6.12.	Inclusion of the packaging for reuse in the information system for packaging and packaging waste	01.01.2005	EEA, NSI	50	EMEPA
11.6.13	Introduction of automated system for processing of the data for packaging and packaging waste	01.04.2005	EEA	10	External sources
11.6.14.	Control over the implementation of the conditions of the permit of the Recovery Organization	permanent	RIEW	-	-
11.6.15.	Training of the state administration and municipalities for implementation of packaging waste management legislation	permanent	MOEW, other institutions and RO	35	EMEPA
11.6.16.	Publishing and dissemination of information materials	permanent	MOEW, Municipalities, RO	5 000	EMEPA, RO, municipal budgets
11.6.17.	Information campaign for separate collection and recovery of packaging waste	30.6.2007	MOEW	500	EMEPA
11.6.18.	Development and implementation of a training program for waste recycling oriented towards the schools	30.06.2004-30.06.2007	MOEW, MES, Municipalities	1200	EMEPA, BAPE
11.7.	*HEALTH CARE WASTE*				
11.7.1.	Raising of the awareness for the health care waste issues through organization of training seminars for hospital personnel in different healthcare establishments in the different regions	31.12.2005	MH	100	Health care facilities, state budget, municipal budges
11.7.2.	Inclusion of issues for health care waste management in the programs for training of the medical staff and in the training programs for the medical educational institutions	31.12.2004	MH, MU	-	-
11.7.3.	Revision of the guidelines for separate collection and treatment of the health-care waste	31.12.2003	MH	-	-
11.7.4.	Gradual implementation of separate collection of hazardous waste in healthcare establishments and private practices	31.12.2007	MH, Health care facilities, Municipalities		Health care facilities (loans form EMEPA)

№	Measure/action	Deadline (start-end)	Responsible institution	Cost estimation [thous. BGN]	Proposed sources of funding
11.7.5.	Application for issuing of permits for activities with health care waste	30.06.2004	Hospitals	-	-
11.7.6.	Preparation of feasibility studies, tender documents for supply, construction and erection of equipment and installations for disposal of hazardous waste from healthcare establishments	31.12.2004	MOEW Municipalities	10	EMEPA, External sources
11.7.7.	Establishment of network of regional facilities for treatment of hazardous waste from all healthcare establishments	31.12.2007	MH, Municipalities, regional administrations	25 950	State budget, External sources
	▪ construction and putting into operation of 6 autoclave disposal facilities;			6 000	External sources, EMEPA, State budget
	▪ construction and putting into operation of 4 incinerators for healthcare waste.			22 950	External sources, EMEPA, State budget
11.7.8.	Strict control over the activities of all persons carrying out collection, storage, transportation and disposal of hazardous from health care establishments, incl. over the fulfilment of the requirements for documentation and reporting	Permanent	RIEW, HEI		

CHAPTER VII. INVESTMENT PROGRAME

The investment projects and the possibilities for financing of the defined strategic objectives (Chapter 5) and the measures of the action plan (Chapter 6) are presented in this chapter. The investment projects, the key assumptions concerning the economic parameters and the possibilities for financing are listed out in paragraph 7.2.

The sources for financing of the investment measures envisaged in the programme are presented in paragraph 7.3.

7.1. KEY ASSUMPTIONS USED FOR DETERMINATION OF THE ECONOMIC PARAMETERS AND FINANCING POSSIBILITIES

The following parameters have been taken into account for the preparation of the Investment program:

- the road map for accession of Bulgaria to EU in 2007 developed by the European Commission.
- the possibilities for funding of large-scale investment projects in the environmental sector through the pre-accession funding instruments of EU (ISPA, PHARE) and the possibilities for financing through the Structural Funds during 2007.
- necessary investments, regarding the realization of projects for construction of the system of regional municipal waste landfills, closure of existing landfills as well as the projects for waste collection, recycling and recovery of packaging wastes and end-of-life vehicles are determined in accordance with the implementation of programs of the EC Directives1999/31/EC on landfill of waste, Directives94/62/EC on packaging and packaging waste, and 2000/53/EC on end-of-life vehicles, approved in 2003.
- the prognosis for the Bulgarian private and public investments is based on the information for the funds spent according to the budgets of the proceeding years, the information from the National statistical institute (NSI) about the amount of the investments in the field of environment and the assumption that these financial resources will grow up during the period of implementation of the Programme. For the determination of the upper limits of the funding, a limiting condition related to the percentage of these costs to the Gross Domestic Product (GDP) is specified. The upper investment thresholds are set to 3% of the GDP for the environment and to a maximum of 1% of the GDP for the waste management. The macroeconomic indicators are determined according to the prognosis set in the Programme for implementation of Directive 1999/31/EC.
- a conservative prognosis for the participation of other donors for free funding of investment projects in the waste disposal sector have been made as well as for the funding provided by private investors.

The investments that are not evaluated in the Programme are:

- private investments needed for implementation of the measures envisaged in the company's waste management programmes regarding the adaptation into compliance/closure of landfills operated by industrial enterprises, construction of new recovery/disposal facilities etc.;
- investments needed for construction of facilities for pre-treatment of WWTP sludge, included in the National programme for priority construction of wastewater treatment plants;
- the investments needed for the improvement of management of waste oils, used tyres and spent batteries and accumulators, for which it is assumed that the investments will be provided by the private sector. The reimbursement of the costs will be provided by the funds raised by the product charges.

7.2. PRIORITY INVESTMENT PROJECTS

The investment projects included in the programme will ensure the implementation of the objectives of the NWMP till the end of 2007.

The investments are listed in order of the priority of the project by taking into account of the following groups of investment projects:

- construction of regional landfills for municipal waste;
- closure of existing landfills for municipal waste;
- cleaning up and rehabilitation of the illegal dump sites;
- construction of National Hazardous Waste Treatment Centre;
- facilities for disposal of healthcare waste;
- completion of the national laboratory system for waste;
- facilities for treatment of biodegradable waste;
- minimization of the risk resulting form past contaminations with hazardous waste on the territory of the enterprises;
- storage of obsolete pesticides;
- establishment of municipal waste collection and transportation system for the whole territory of the country ;
- organization of system for separate collection of packaging and other wide spread waste;
- recovery of wood waste ;
- management of end-of-life vehicles.

The investments needed for the implementation of NWMP are presented in Table 7.1.

Table 7.1. Investments for the implementation of the NWMP for the period 2003-2007

Groups of investment projects		**Investments (thous. BGN)**					
		2003	2004	2005	2006	2007	Total for the period
1	Construction of regional landfills for municipal waste	38 518	85 467	37 677	35 845	75 711	273 218
2	Closure of existing landfills for municipal waste , served by organized municipal waste collection system	3 442	5 163	6 885	8 606	10 327	34 423
3	Cleaning up and elimination of illegal dump sites	0	3 500	3 500	5 250	7 000	19 250
4	Investments for treatment of construction and demolition waste	0	400	800	1200	1600	4 000
5	Construction of National Hazardous Waste Treatment Centre	0	8 414	15 776	26 294	36 812	87 296
6	Healthcare waste						
	6.1. Construction of incinerators (Sofia, Plovdiv, Varna, Pleven)						
	▪ Sofia	4 300	0	0	0	0	4 300
	▪ Plovdiv	0	1 365	2 730	2 730	0	6 825
	▪ Varna	0	0	1 365	2 730	2 730	6 825
	▪ Pleven	0	0	1000	2000	2000	5 000
	6.2. Autoclave facilities	0	1 200	2 600	2 200	0	6 000
7	Completion of the national laboratory system for waste	0	150	1 200	1 200	0	2 550
8	Facilities for treatment of biodegradable municipal waste						
	▪ Pre-treatment and composting	0	600	6 365	9 730	2400	19 095
	▪ Home composting	0	240	480	800	1 600	3 120
9	Past contaminations with hazardous waste at the territory of enterprises	4 996	15 838	14 251	3 726	2 074	40 885
10	Storage of obsolete pesticides	1 000	1 000	1 000	1 000	1 000	5 000
11	Organization of system for municipal waste collection and transportation	5 706	17 118	28 530	28 530	34 236	114 120
12	System for separate collection of packaging and packaging waste		30 000	35 000	35 000	35 000	140 000
13	Wood waste		500	500	1000	1000	3 000
14	End-of-life vehicles						
	▪ storage	0	5000	4500	0	0	9 500
	▪ dismantling	0	0	0	10000	10000	20 000
	▪ shredding	10000	0	0	0	0	10 000
	Total for the programme	**67 962**	**175 955**	**164 159**	**177 841**	**228 490**	**814 407**

7.2.1. Construction of regional landfills for municipal waste

7.2.1.1. Investment projects

For ensuring of the implementation of Directive 1999/31/EC on the landfill of waste, the NWMP envisages the realization of 54 investment projects for reconstruction of existing and construction of new regional landfills for disposal of municipal waste. The regions and the time schedule for realization of the projects are in accordance with the Programme for implementation of Directive 1999/31/EC. The necessary investments for the period 2003-2007 are presented in Table 7.1.

7.2.1.2. Financing

At present, the investments for construction of new regional landfills that meet the legal requirements are provided through programme ISPA, the state budget, EMEPA and bilateral projects. The municipalities and the landfill operators are not responsible for provision of the funding for the construction. During the period of implementation of the NWMP (2003-2007), the necessary measures for optimal spending of the financial resources allotted by the state budget, EU and other donors should be taken.

The necessary financing for the construction of the new regional landfills for the period 2003 - 2007 is determined on the basis of the Programme for implementation of Directive 1999/31/EC on the following assumptions:

- for the regional landfills included in Group 1 (landfills in operation) it is accepted that no extension or reconstruction is envisaged for the period till 01.01.2007 and there will be no investments except the usual expenditures for maintenance.
- the investments envisaged for the existing landfills: Suhodol (Sofia), Tsalapitsa (Plovdiv), Vaglen (Varna) and Bogdan (Dobritch) are related only to the ensuring of their operation until their closure in 2008. For each of the above-indicated 4 regions it is envisaged that new landfill in Group 5 will be constructed.
- for the regional landfills included in Group 2 and Group 3, the investments in 2003 and 2004 are determined in accordance to the financial resources allotted as specialized financing by the state budget (Appendix 5 of the State Budget Act), Enterprise for Management of Environmental Protection Activities (EMEPA) and programme ISPA.
- for the regional landfills included in Group 4 it is envisaged that the preliminary activities will start in 2003 and the construction will be completed in 2006.
- for the regional landfills included in Group 5 it is envisaged that the preliminary activities will start in 2004 and the construction will be completed in 2008.
- for the regional landfills included in Group 6 it is envisaged that the preliminary activities will start in 2005 and the construction will be completed in 2009.
- for each of the landfills included in the above groups the necessary capacity by years is determined on the basis of the prognosis for the quantities of the municipal waste and the data for the population served by each landfill.
- the necessary investments for each landfill are determined by the model proposed in the Programme for implementation of Directive 1999/31/EC on landfill of waste. This model takes into account the capacities of each of the landfills, based on the following assumptions:

- operation period of 15 years;
- term for the preliminary activities and construction – 3 years;
- construction and operation of the landfill in 3 stages;
- density of compacting waste 0,95 tones per cubic meter for the landfills with capacity above 5000 tones per year and 0,75 tones per cubic meter for landfills with capacity below 5000 tones per year;
- average depth within the limits of 3-18 meters depending on the landfill capacity;
- surface of the landfill determined as a function of the necessary capacity for the envisaged period of operation and the assumed density of compacted waste and the average depth;
- the single prices of the different components for the construction of the landfill are according to the actual prices in 2002.

- The model includes determination of the necessary investments related to:
  - preliminary actions – studies, design, obtaining of necessary permits, assignment of the construction;
  - acquisition of the land;
  - construction works allocated in the following groups:

    - initial construction works related to the preparation of the site including excavation, preparation of the landfill foundation, compacting etc.; construction of primary buildings and facilities; construction works for the first stage of the landfill;

    - investments during the operation including finish-up of the second and third stage of the landfill;

    - equipment and mechanics– it is accepted that the operation period for the means of transport, compacting, load- and dump- techniques, the pumps for the leachate and maintenance equipment is 7,5 years and for the rest of the equipment (for example weighing bridge, lighting etc.) the operation period is the same as the operation period of the landfill;

    - construction of gas drainage system;

    - closure and land restoration of the landfill site – it is accepted that the investments related to this activities are performed after the completion of each stage.
- The calculations are performed with the assumption of unexpected costs at the amount of 8% of the preliminary activities and construction works.

The necessary investments for each regional landfill are presented in Table 7.2. The location and the regions served by the different landfills are presented in Fig. 3.

Table 7.2. Necessary investments for construction of regional landfills in thous. BGN

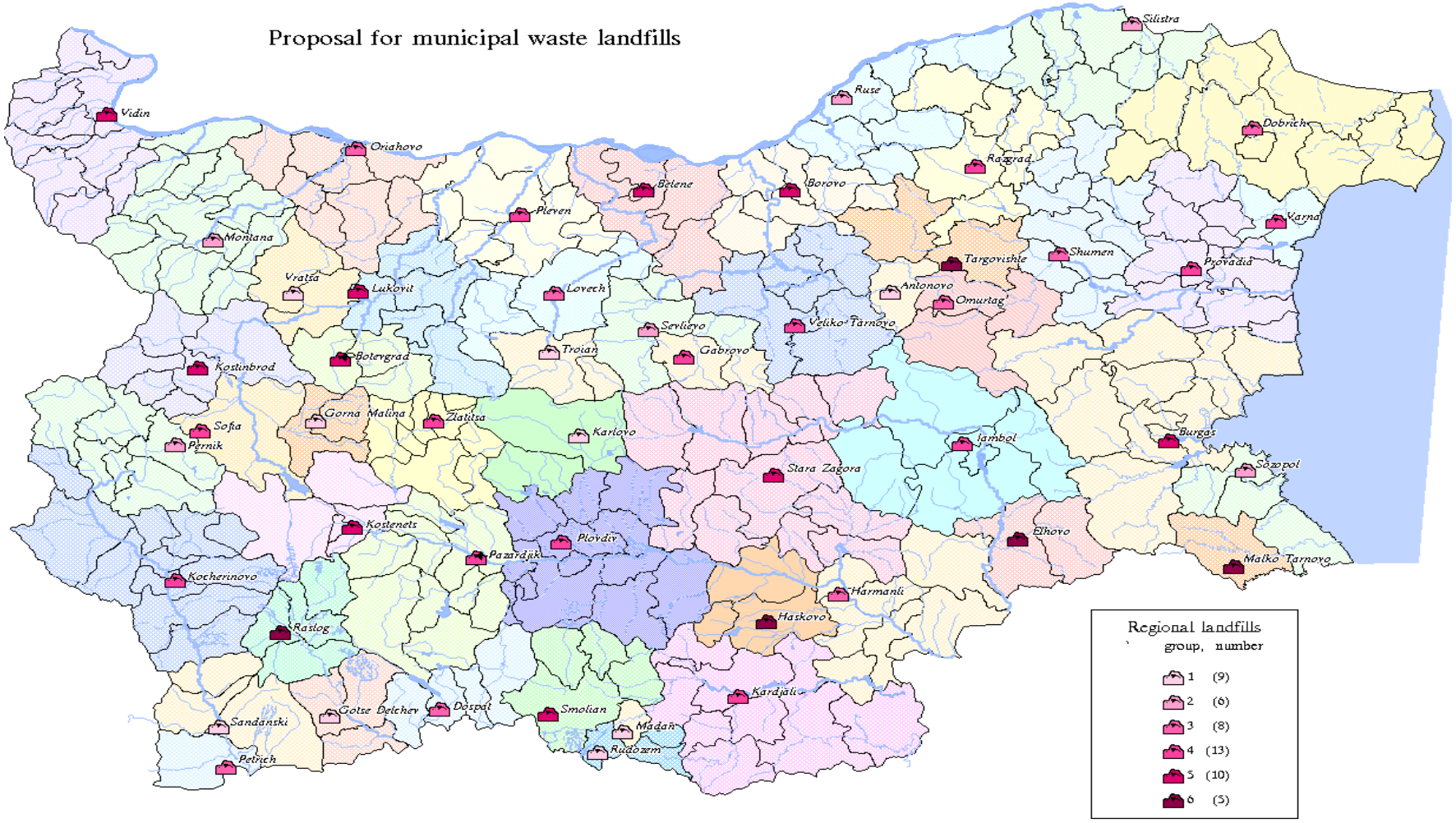
Group	№	Regional landfill	2003	2004	2005	2006	2007	Total for the period
-	1	Varna, Aksakovo	703	1 500	1 200	0	0	3 403
-	2	Plovdiv, Stamboliiski, Rodopi	3 400	2 500	4 500	0	0	10 400
-	3	Sofia-Suhodol	1 000	1 000	0	0	0	2 000
group 1	4	Antonovo	110	0	0	0	0	110
group 1	5	Vratza, Mezdra	800	0	0	0	0	800
group 1	6	Gorna Malina, Elin Pelin	861	0	0	0	0	861
group 1	7	Gotze Delchev, Garmen, Hadzidimovo	600	0	0	0	132	732
group 1	8	Karlovo, Hisaria	147	2 010	0	0	0	2 157
group 1	9	Madan, Zlatograd, Nedelino	209	330	0	0	0	538
group 1	10	Rudozem	0	0	0	0	0	0
group 1	11	Sandanski, Kresna, Strumiani	0	0	0	0	134	134
group 1	12	Troyan, Apriltzi	43	0	0	0	0	43
group 2	13	Montana, Krivodol, Boichinovtzi, Berkovitza, Lom, Tziprovtzi, Geogry Damianovo, Brusartzi, Medkovetz, Varshetz, Yakimovo						
group 2	14	Pernik, Zemen, Tran, Kovachevtzi, Breznik, Radomir						
group 2	15	Russe, Vetovo, Ivanovo, Slivo pole, Tzar Kaloyan, Tutrakan						
group 2	16	Sevlievo, Drianovo, Suhindol						
group 2	17	Silistra, Kainardzja, Sitovo, Dulovo, Alfatar, Glavinitza						
group 2	18	Sozopol, Primorsko, Tzarevo						
Total for Group 2			13 437	59 376	11 620	667	0	85 100
group 3	19	Dobrich, Dobrich-selska, Tervel, Nikola Kozlevo, Krushari, Kavarna, Shabla, General Toshevo, Balchik	0	0	0	1 000	1 390	2 390
group 3	20	Dospat, Satovcha, Borino, Devin	669	4 017	0	0	0	4 686

Group	№	Regional landfill	2003	2004	2005	2006	2007	Total for the period
group 3	21	Lovech, Letnitza, Ugarchin	2 100	3 500	1 500	0	0	7 100
group 3	22	Omurtag, Brabnitza, Kotel	0	0	0	0	0	0
group 3	23	Oriahovo, Valchedram, Kozlodui, Hairedin, Mizia, Biala Slatina, Borovan, Kneja	2 600	1 850	2 787	0	0	7 237
group 3	24	Petrich	2 912	600	0	0	0	3 512
group 3	25	Razgrad, Loznitza, Isperih, Zavet, Kubrat, Samuil	1 500	1 500	3 800	0	0	6 800
group 3	26	Harmanli, Madzarovo, Liubimetz, Topolovgrad, Simeonovgrad, Svilengrad	610	2 000	2 712	0	0	5 322
group 3	27	Shumen, Smiadovo, Veliki Preslav, Hitrino, Kaolinovo, Kaspichan, Venetz	2 331	679	0	0	0	3 010
group 3	28	Yambol, Nova Zagora, Tundza, Sliven, Straldja	300	480	2 220	2 200	0	5 200
group 3	29	Dobrich-Bordan	2 895	1 223	0	0	0	4 118
group 4	30	Veliko Tarnovo, Elena, Zlatitza, Lyaskovetz, Gorna Oriahovitza, Strajitza	0	0	163	918	5 402	6 483
group 4	31	Gabrovo, Triabva	0	0	156	810	5 079	6 045
group 4	32	Zlatitza, Chavdar, Mirkovo, Pirdop, Chelopech, Anton, Koprivchitza, Panagurishte, Strelcha	1 000	2 500	2 000	0	0	5 500
group 4	33	Kocherinovo, Rila, Boboldol, Kustendil, Nevestino, Blagoevgrad, Simitli, Sapareva banya, Boboshevo, Dupnitza, Trekliano	0	222	1 664	7 796	0	9 682
group 4	34	Kurdzali, Chernoochene, Dzebel, Momchilgrad, Krumovgrad, Ivailovgrad,	0	180	1 195	6 228	0	7 603

Group	№	Regional landfill	2003	2004	2005	2006	2007	Total for the period
		Stambolovo, Ardino, Kirkovo						
group 4	35	Pazardjik, Peshtera, Belovo, Lesichevo, Bratzigovo, Septembri, Rakitovo, Batak, Velingrad	0	0	0	219	1 331	1 550
group 4	36	Pleven, Iskar, Dolni Dabnik, Guliantzi, Dolna Mitropolia, Pordim	0	0	0	205	1 417	1 622
group 4	37	Provadia, Dalgopol, Vetrino, Dolni chiflik, Beloslav, Avren, Valchidol, Suvororvo, Devnya, Novi pazar, Byala	0	0	0	160	864	1 024
group 5	38	Belene, Nikopol, Svishtov, Levski, Pavlikeni	0	0	168	1 005	5 662	6 835
group 5	39	Borovo, Byala, Dve mogili, Tzenovo, Polski Trambesh, Opaka	0	0	135	624	4 320	5 079
Group 5	40	Botevgrad, Etropole, Pravetz	0	0	138	687	4 512	5 337
group 5	41	Burgas, Sredetz, Kameno, Nesebar, Pomorie, Aitos, Ruen, Karnobat, Sungulare	0	0	0	265	1 860	2 125
group 5	42	Varna	0	0	262	1 828	9 000	11 090
group 5	43	Vidin, Bregovo, Boinitza, Kula, Gramada, Novo selo, Dimovo, Rujintzi, Belogradchik, Cuprene, Makresh	0	0	0	166	966	1 132
group 5	44	Kostenetz, Ihtiman, Samokov, Dolna bania	0	0	151	924	5 227	6 302
group 5	45	Kostinbrod, Svoge, Slivnitza, Bojurishte, Godech, Dragoman	0	0	142	758	4 727	5 627
group 5	46	Lukovit, Roman, Yablanitza, Cherven briag, Teteven	0	0	150	914	5 198	6 262
group 5	47	Plovdiv, Maritza, Kaloyanovo, Stamboliski, Rodopi, Peruchtitza,	0	0	0	359	2 605	2 964

Group	№	Regional landfill	2003	2004	2005	2006	2007	Total for the period
		Saedinenie, Krichim, Asenovgrad, Rakovski, Sadovo, Brezovo, Parvomai						
group 5	48	Smolyan, Laki, Banite, Chepelare	0	0	140	724	4 622	5 486
group 5	49	Sofia	0	0	614	5 192	614	6 420
group 5	50	Stara Zagora, Radnevo, Opan, Galabovo, Chirpan, Bratya Daskalovi, Karanlak, Gurkovo, Nikolaevo, Pavel banya, Maglish, Tvarditza	0	0	260	1 807	8 938	11 005
group 6	51	Elhovo, Bolyarovo	0	0	0	121	400	521
group 6	52	Malko Tarnovo	0	0	0	110	173	283
group 6	53	Razlog, Bansko, Belitza, Yakoruda,	0	0	0	0	135	135
group 6	54	Targovishte, Popovo	0	0	0	157	815	972
group 6	55	Haskovo, Mineralni bani, Dimitrovgrad	292	0	0	0	188	480
Total necessary investments for construction of regional landfills			**38 518**	**85 467**	**37 677**	**35 845**	**75 711**	**273 218**

Figure 3: Proposal for non-hazardous municipal waste landfills that meet the requirements of Directive 1999/31/EC on landfill of waste



7.2.2. Closure of existing municipal waste landfills that do not fulfil the requirements of the legislation, serving by system for organized municipal waste collection

7.2.2.1. Necessary investments

The expenditures for closure of the existing landfills are evaluated taking into account the designed area of the existing 663 landfills by the year 2001 and the assumption that the price for closure of unit area costs 18 BGN per square meter.

It is assumed that the costs in 2003 will amount to 2% of the total costs for closure and land restoration and that they will be increased gradually to 6% in 2007. The necessary investments are 34 423 thous. BGN.

7.2.2.2 Financing

The future investments for the closure of existing landfills for municipal waste is envisaged to be performed with financial resources provided by the state budget.

7.2.3 Closure of illegal dump sites and past contaminations with municipal waste

7.2.3.1. Necessary investments

The total costs for closure of the dumpsites and for the sanitation of past waste contaminations are estimated to amount to 19 millions BGN according to evaluations made by the municipal administrations. The allocation of the necessary funds for the period 2003-2007 is presented in table 7.1.

7.2.3.2. Financing

The resources for closure of the dumpsites and for the sanitation of past waste contaminations will be provided by the municipal budgets.

7.2.4 Construction of regional facilities for construction and demolition waste

7.2.4.1. Necessary investments

During the period of the NWMP, it is envisaged that proper conditions for storage, braking up and sorting of the construction and demolition wastes at the regional landfills. The pre-treated construction and demolition wastes may be used as covering material for the operation of the landfills and/or for the construction of temporary roads.

The present programme envisages purchasing of 5 facilities for crushing and sorting for the period until 2007. The total amount of the investments for supply and erection of the facilities is estimated to approximately 4 000 thous. BGN.

This figure does not include the amount of the necessary investments for treatment and recovery of construction and demolition waste at the large generators from the private sector.

7.2.4.2. Financing

The investments for facilities for the pre-treatment, recycling and recovery of construction and demolition waste will be provided by the private sector or by loans from EMEPA .

7.2.5. Construction of National Hazardous Waste Treatment Centre (NHWC)

7.2.5.1 Necessary investments

The necessary investments for construction of National Hazardous Waste Disposal Centre evaluated to 53,8 million EURO (according to the Financial Analysis developed under the PHARE Project BG 9810-02-01 (003) and Danish EPA Project No. M128/008-0071 "Phased approach for the construction of National Hazardous Waste Disposal Centre").

7.2.5.2 Financing

The investments for construction of the Centre shall be provided by ISPA (grant -60%) and a by a loan given by the EIB or other financial institution. The construction of the Centre will be carried out during the period 2004-2008. According to the financial calculations, the grant will be given in portions during the construction period (2004 - 2008) proportionally to the on actual progress. The amount of the investments for the period of implementation of the NWMP is estimated to 83% of the total amount of the investments needed for the construction of the Centre.

7.2.6 Disposal of healthcare waste

7.2.6.1. Necessary investments

The necessary investments for the construction of installations for treatment and disposal are determined in accordance with the National Plan for management of hospital waste approved in 2001. For the period 2004-2006, it is envisaged that 6 new stationary regional autoclave facilities for treatment and disinfecting and 4 incinerators will be constructed.

Incinerators

During the period of validity of the Programme, it is envisaged that four health care incinerators will be constructed, located in Sofia, Plovdiv, Varna and Pleven. The construction will be finalised by 2003, 2006 and 2007 respectively.

The necessary investment for the incinerators in Plovdiv and in Varna are evaluated to 6 825 thous. BGN (3 500 thous. EURO) per each incinerator with capacity of 250 kg/hour under continuous operation and for the incinerator in Pleven the investments are 5 000 thous. BGN. The disbursement of the expenditures during the 3 years period for construction of each incinerator will be 20% in the total amount in the first year and 40% in the second and the third year.

The financial resources for finishing of the construction and erection of the incinerator in Sofia in 2003 amounts to 4 300 thous. BGN.

The evaluation of the necessary investments does not include the financial resources for separate collection, temporary storage and pre-treatment of infectious waste. The funds will be provided by the healthcare establishments.

AUTOCLAVES

Six regions, where new autoclave installations will be constructed for disinfecting of infectious waste by steam, are outlined in the National Plan for management of hospital waste,.
For the Northern Part of Bulgaria the following regions are determined:

- Vidin, Montana, Vratza
- Ruse, Silistra, Razgrad, Targoviste, Shumen
- Dobrich, Varna

For the Southern part of Bulgaria the following regions are determined:

- Kustendil, Blagoevrad
- Stara Zagora, Sliven, Jambol
- Burgas

The investments for supply and erection of these regional facilities with capacity of 200 kg/h are evaluated to 948 thousand BGN. It is envisaged that the investments will be made 20% in 2004 and 80% in 2005.

MICROWAVE DISPOSAL

Taking into consideration the investment and operation costs for the application of microwave disposal it is foreseen that the projects for introduction of microwave facilities will be financed by the healthcare establishments or with loans from EMEPA.

7.2.6.2 Financing

The necessary investments for 2003 for accomplishment of the incinerator in Sofia are 3,1 million BGN provided by Danish Environmental Protection Agency (DEPA) and by 1,2 million BGN by EMEPA.

It is expected that the funds for construction of the incinerator in Varna to be provided by international grants (50%) and through funding by EMEPA (50%). The incinerator in Plovdiv will be financed by the Swiss government. The incinerator in Pleven and regional autoclaves will be funded by EMEPA.

7.2.7. Finishing of the national laboratory system of waste

7.2.7.1 Necessary investments

It is estimated that the investments necessary for the finishing of the national laboratory system for analyses of waste for the period 2004 –2006 will amount to 2,5 million BGN.

Such laboratories will be set up in the Executive Environmental Agency and in the National Centre of Hygiene, Environmental Medicine and Nutrition at the Ministry of Health.

7.2.7.2 Financing

It is assumed that 80% of the investments will be provided through programme PHARE or other international sources. EMEPA will finance 20% of the investments.

7.2.8. Facilities for treatment of biodegradable waste

Pre-treatment and composting

It is envisaged that the composting of biodegradable waste will be the main method for reduction of the quantities of the biodegradable waste going to landfills.

In the Programme for implementation of the Directive 1999/31/EC on landfill of waste, an assumption is made that 18 regional installations for composting with an average annual capacity of 20 000 tones raw waste have to be constructed. Three pilot composting plants will be constructed for the period 2003-2007 to the total amount of 19 million BGN. The investments for construction of 1 composting plant are estimated to 6,4 million BGN. The evaluation of the necessary investments is performed on the basis of a model of composting plant and the following costs are taken into account in the cost calculations:

- preliminary activities;
- land acquisition;
- construction works;
- supply of equipment and mechanics (7,5 years operation period is assumed).

Depending on the specificity of the selected regions that will be served by the pilot installation the proposed technology for composting may be replaced by other methods for treatment of biodegradable waste such as aerobic digestion, anaerobic digestion etc.

Home composting

For determination of the necessary funds for home composting, costs amounting to 140 BGN per household are assumed. This amount includes the supply of equipment (composting bins) and training of the consumers. The assumptions about the number of households involved in the home composting in the period 2004 – 2007 are made as follows:

	2003	2004	2005	2006	2007	Total 2003-2007
Number of households	0	1.500	3.000	5.000	10.000	19.500
Investment costs	0	240	480	800	1.600	3.120

7.2.8.2. Financing

The regional composting installation will be part of the regional municipal waste landfills, in connection with the implementation of the Directive 1999/31/EC. The investments for their construction will be provided by ISPA. The funding of the projects for home composting will be provided by EMEPA.

7.2.9 Minimization of the risk from past contaminations with hazardous waste on the territory of enterprises

7.2.9.1 Necessary investments

The necessary investments for minimization of the risk from past contaminations at the territory of the enterprises are the expenditures for the implementation of the executive agreements concluded with the enterprises privatized till the end of 2003.

The total investment costs for closure and land restoration of the landfills for hazardous waste implemented as measures from the programs for elimination of past contaminations at the privatized industrial enterprises are evaluated to 41 million BGN during the period of the program.

7.2.9.2 Financing

The financing of the programs for elimination of past contaminations at the privatized industrial enterprises will be provided by the state budget.

7.2.10 Obsolete pesticides

7.2.10.1. Necessary investments

According to the information from the Ministry of Agriculture and Forestry, the quantity of the obsolete pesticides in Bulgaria amounts to 6298 tons. By the time of adoption of the Programme 2253 tons from the total amount are stored in compliance with the legal requirements and there is no need from additional investments for their management. For minimization of the risks to the environment arising form inadequate storage of obsolete pesticides it is envisaged that the necessary investments at amount of 3,03 million BGN will be provided. This amount includes the costs for temporary storage, packing and transportation for each of the remaining 4 045 tons waste at price 750 levs/ton.

There are two options for environmentally sound management of the obsolete pesticides:

- temporary storage in compliance with the legal requirements and gradual disposal after the construction of the National Hazardous Waste Disposal Centre;
- temporary storage in compliance with the legal requirements and exportation of these wastes for final disposal abroad.

The funds for the different final disposal options are evaluated between 1000 and 3000 BGN per ton (depending on the transport distances, the disposal costs and the type of the pesticides). These costs are not taken into account in the evaluation of the necessary investment for the implementation of the programme.

7.2.10.2. Financing

The NWMP envisages that the costs for re-packing and safe storage of the obsolete pesticides will be provided by the EMEPA and by the funds of MAF.

7.2.11. Organized system for collection and transportation of municipal waste

7.2.11.1. Necessary investments

The necessary investments for optimization and enlargement of the existing systems for municipal waste collection and transportation are estimated to 114 million BGN. The amount of the investments is determined based on the experience for investments at the average of 16 BGN per inhabitant served population. The determination of the total amount of the investments is performed according to the prognosis for the decrease of the number of the population by 2007 and on an assumption for the annual increase of the investments for the period of implementation of the NWMP.

7.2.11.2. Financing

The NWMP envisages that the necessary financing will be provided equally by the municipal budgets and by private investors. EMEPA will continue to give loans for funding of these activities.

7.2.12. Organization of system for separate collection of packaging and other wide spread waste

7.2.12.1 Necessary investments

The evaluation of the necessary investments for application of separate collection, recycling and recovery of packaging waste is according to the Program for Implementation of Directive 94/62/EC on packaging and packaging waste. The total amount of the investments for the period 2003 –2007 amounts to 35 million BGN per year. This amount does not include the necessary financial resources for construction of additional capacity for recycling and/or recovery of packaging waste which should be provided by the private sector.

7.2.12.2. Financing

The NWMP envisages that the financing of the investments will be provided by private investors (50 %) and funds by EMEPA, allotted to the municipalities.

During the year 2004 product charge for placing on the market of Republic of Bulgaria will be introduced thus ensuring the implementation of the "producer responsible" and "polluter pays" principles. The product charge will be paid by the producers and importers of packed goods, proportional to the packaging quantities and type of the packaging material. The collected funds will be allotted by EMEPA for ensuring the separate collection, recycling and recovery of the packaging waste.

7.2.13. Wood waste

7.2.13.1. Necessary investments

The NWMP envisages the construction of installations for recovery of wood waste including for production of wood briquettes with total annual capacity about 20 000 tons. The total amount of the necessary investments for supply and erection of equipment evaluated to 3 million BGN.

7.2.13.2. Financing

The financing of the installations will be done through free of interest loans at the amount of 70% of the amount of the investments that will be allotted by EMEPA through tendering.

7.2.14. End-of-life vehicles

7.2.14.1 Necessary investments

The necessary investments for the management of end-of-life vehicles are determined in the Program for implementation of Directive 2000/53/EC on end-of-life vehicles.

The necessary investments include the financial resources for construction of temporary storage sites, two dismantling centres and shredding installation at the total amount of 39,5 million BGN.

7.2.14.2 Financing

The necessary investments for the construction of temporary storage sites will be provided by the private sector and through free of interest loans from EMEPA. The financial resources for construction of dismantling centres will be provided by EMEPA by means of free of interest loans at the amount of 70% from the total value of the project and by the private sector.

The construction of the shredding installation will be provided by the private sector.

7.2.15. Additional administrative costs providing for the implementation of programme

The additional administrative costs for implementation of the Action plan connected with appointment of additional personal and provision of the necessary technical equipment for the competent authorities, training, drawing up of legislation, realization of information campaigns, etc. are presented in Table 7.4.

Table 7.4. Additional administrative costs and proposed sources of funding for period 2003-2007

Year	State budget	EMEPA	External funding	Other sources	Total
	Thous. BGN	Thous. BGN	Thous. BGN	Thous. BGN	Thous. BGN
2003	1 310,0	593,5	400,5	70,0	**2 374,0**
2004	1 305,0	2 242,0	925,5	667,5	**5 140,0**
2005	1 295,0	2 075,0	372,5	592,5	**4 335,0**
2006	1 285,0	2 529,5	355,5	750,0	**4 920,0**
2007	1 265,0	2 044,5	340,5	770,0	**4 420,0**
Total for the period	6 460,0	9 484,5	2 394,5	2 850,0	**21 189,0**

7.3. SOURCES OF FINANCING OF THE PROGRAME

The total amount of the necessary financial resources for implementation of the programme is estimated to 835 million BGN, incl. 814 million BGN for realization of priority investment projects and 21 million BGN for additional administrative costs.

The prognosis for the sources of the necessary funds is presented in Table 7.5. The national funding presented as a percent of GDP ranges between 0,19% and 0.31%. The state have to allot the biggest percent of GDP for financing of investment projects in the waste management sector in 2007 – 0,31%. The high amount of the necessary investments in the initial stage of the Programme is basically as a result of the requirement for meeting of the deadlines for closure/adapting into compliance of the existing landfills till the middle of 2009. The financial resources envisaged for funding by the state have to be planned during the drawing up of the State budget and should be provided during the period till 2007 inclusive.

Table 7.5. General overview of the necessary investments and the sources of funding for the period 2003-2007

Indicator	Measure	2003	2004	2005	2006	2007	Total for the period
Population	inhabitants	7 785 091	7 740 829	7 696 568	7 652 307	7 608 045	
GDP	mln.BGN.	35 287	38 431	41 797	44 848	48 211	
GDP growth	%	4,72	5,41	5,26	4,30	4,50	
ISPA/ Cohesion funds - maximum amount of the funding for environmental protection	mln.BGN	102	166	199	231	508	**1 206**
Total amount of the investments		67 962	175 955	164 159	177 841	228 490	**814 407**
Municipal Budgets	thous.BGN	1 427	7 780	10 633	12 383	15 559	**47 780**
Private investments	thous.BGN	12 853	26 589	34 825	36 105	41 738	**152 110**
State Budget	thous.BGN	25 897	49 296	46 643	26 662	45 817	**194 315**
Grants from EMEPA	thous.BGN	12 513	12 603	10 935	11 470	6 353	**54 786**
ISPA/PHARE	thous.BGN	10 746	55 308	25 778	43 116	65 394	**200 342**
Grants – other donors	thous.BGN	3 100	1 365	3 413	4 095	1 365	**13 338**
Loans by EMEPA	thous.BGN	1 427	19650	25 623	33 493	37 539	**117 730**
Loans by other donors (EIB, WB, etc.)	thous.BGN	0	3 366	6 310	10 518	14 725	**34 918**
National funding	thous.BGN	54 116	115 917	128 658	120 112	147 006	**565 809**
Percentage of GDP of the National funding	%	0,19	0,29	0,30	0,28	0,31	

CONCLUSION

By the implementation of the objectives and measures set in the present program a significant step towards solving the problems related to waste management in the country will be taken.

During the period 2003-2007 the efforts will be directed towards complete harmonization of the national legislation with the EU requirements and its effective implementation in the country. During the next years a lot of work will be done for introduction of system for collection and transportation of municipal waste, covering the whole country as well as for establishment of network of facilities and installations that should ensure disposal/recovery of the waste using the best available techniques located as closely as possible to the place of waste generation by means of most appropriate methods and technologies in order to ensure high level of protection for the environment and public health. The control activities will be improved by specifying more precisely the competencies of the competent authorities and the covering of the costs for waste disposal will be ensured by the implementation of the "polluter pays principle". During the period of implementation of the NWMP one of the priorities will be minimization of the waste quantities destined for final disposal by their recovery, extraction of raw materials and energy from the waste and their utilization as additional resource for the national economy as well as increase of the quantity of the recovered waste from Bulgarian origin by restricting the import of waste only for recovery and in case contract with the final user.

The program will be financially secured by EMEPA, State budget, EU pre-accession funds and other international sources.

The NWMP is subject to improvement, amendment and update. This procedure will only be used if it is proven that amendments are necessary. Revision of the NWMP is envisaged in interval of 5 years and the next NWMP will be developed for the period 2008 – 2012. The operative implementation of the Programme will be supervise by Waste Management Directorate and the other competent departments of the Ministry of Environment and Water. The report on the implementation of the Programme will be presented annually to the Council of Ministers together with the report on the National Environmental Strategy. The general public will be informed for the results of the implementation of the Programme and at the same time the reaction of the society regarding its further development will be taken into consideration.

ANNEX № 1

SPECIFIC REQUIREMENTS OF THE NATIONAL WASTE MANAGEMENT LEGISLATION

A. Requirements towards the waste treatment facilities

Sites for location of waste treatment facilities and installations

Regulation No 12 on the requirements that must be met by the sites for location of waste treatment facilities sites (Promulgated in State Gazette, issue 152/1998) determines the conditions and procedures for location of the sites, the construction rules and norms, engineering geological, geological, hydro-geological and hydrological conditions that must be met by the sites. These requirements are in compliance with the requirements for waste incineration, specified in the Directive 84/429/EC on the existing municipal waste incinerators, Directive 89/369/EC on new installations for waste incineration and Directive 1999/31/EC on landfill of waste.

The Regulation covers the sites for treatment of municipal, construction, industrial and hazardous waste, which are located at the source of waste generation or individual sites where the following are carried out:

- waste collection;
- temporary storage, baling, packing or other operations prior and after the main waste disposal operations;
- waste disposal, incl. landfilling;
- recycling or other forms of recovery.

The Regulation requires that the operations performed on waste treatment sites shall ensure treatment or disposal in such a manner, which does not harm the human health and does not involve disposal methods and industrial processes harmful to the environment.

For the location of the waste treatment sites and for organization of the associated activities, the provisions of the Settlement of the Territory Act, Environment Protection Act, Agricultural Lands Protection Act, Forests Act, as well as the international agreements to which Bulgaria is a party shall be fulfilled – for the cases when the agreements set additional requirements.

The Regulation does not provide possibility for postponed or restricted implementation of certain requirements for existing waste treatment facilities. In this respect it shall be applied to any sites, unless otherwise specified in specialized legal documents.

Waste landfills

The requirements for construction, operation and control over the waste landfills are set out in **Regulation 13 (adopted in 1998) on the conditions and requirements for construction and operation of waste landfills** (Promulgated in State Gazette, issue 152/1998). The Regulation is in compliance with Directive 1999/31/EC on landfill of waste.

The regulation sets out three classes of landfills – for hazardous, non-hazardous and inert waste.

The landfilling of the following types of waste is prohibited:

- liquid waste;
- wastes that emit odours;
- incompatible waste;

- waste, which under the landfill conditions are explosive, oxidizing, corrosive, flammable and highly flammable;
- hospital and other clinical waste generated from healthcare and veterinary establishments classified as infectious;
- hazardous waste, which does not meet the criteria stated in table 1, Annex 1, of the Regulation.

The acceptance of waste in different classes of landfills must be in compliance with the following requirements:

- only hazardous waste may be landfilled at landfills hazardous waste;
- landfill for non-hazardous waste may be used for::
  a) municipal waste;
  b) industrial non-hazardous waste;
- inert waste landfills may be used for inert waste only.

The Regulation specifies that the landfill operator is responsible for the waste disposal and requires that the landfilling operations must be executed according to the waste management program approved by the operator.

The Regulation sets out the requirements for:

- control over the landfilling operations, incl. internal control executed by the landfill operator;
- design of the landfill body;
- landfill monitoring systems;
- after-care control;
- requirements for qualification and training of the staff engaged in landfill management.

The regulation requires that the operation of existing landfills shall be stopped if at the time of entering in force of the regulation they are under operation but do not fulfil the following conditions:

- within time limit of one year after the entry into force of the regulation, the landfills do not fulfil the conditions on ensuring hence, security, marking of the landfill area with signs and symbols, waste acceptance control;
- within time limit of two years after the entry into force of the regulation, the landfill operator does not develop and present for approval to the competent authorities conditioning plan for adaptation into compliance with the requirements of this regulation, obligatory accompanied with project for reconstruction of the landfill;
- the measures in the plan under item 2 and the project for reconstruction of the landfill must be envisaged for implementation within 5 years after the entry into force of the regulation.

The closure of the landfills must be done according to preliminary developed plan, and the basic stages of it shall be specified in the landfill design.

Municipal waste disposal

The requirements for the installations for incineration, composting, recycling and other operations for disposal and recovery of municipal waste are laid down in ***Regulating 11 on the conditions and requirements for construction and operation of municipal waste disposal facilities and installations (***Promulgated in State Gazette, issue 152/19). These requirements are in compliance with the requirements for waste incineration, determined in the Directive 84/429/EC on the existing municipal waste incinerators, Directive 89/369/EC on new installations for waste incineration and Directive 1999/31/EC on landfill of waste.

The Regulation transposes the EU requirements for installations for incineration of municipal waste, incl. the emission limit values, technical requirements towards the facilities, obligatory measurements, access to information, and treatment of incineration residues.

Requirements towards the composting facilities and installation and pre-treatment of municipal waste before disposal are introduced.

The requirements for ensuring healthy and safe labour conditions, as well as safe operation of the disposal facilities are also laid down.

Treatment and transportation of industrial and hazardous waste

The requirements of Directive 94/76/EC on waste incineration and Directive 91/689/EC on hazardous waste are transposed into national legislation by the ***Regulation on requirement for treatment and transportation of industrial and hazardous waste*** (Adopted by Decree of the Council of Ministers 53/ dated 19.03.1999. Promulgated in State Gazette issue 29/1999). The purpose of the Regulation is to ensure prevention or when this is impossible limitation to the highest possible degree, the expected negative environmental impacts caused by treatment and transportation of industrial and hazardous waste.

Prohibitions are introduced for:

- placing of hazardous waste in non-cleaned containers, where other non-compatible with them types of waste have been stored;
- mixing of hazardous with non-hazardous waste and/or other substances, including dilution of hazardous waste;
- mixing of hazardous wastes of various categories;
- mixing of recoverable with non-recoverable wastes.

The regulation lays down the requirements towards the facilities and installation for temporary storage, incineration and chemical and physical treatment of industrial and hazardous waste, incl. conditions and procedures for waste collection and acceptance and the activities in emergency situations.

The responsibilities and obligations of the waste holders and carriers are clearly defined as well as the requirements towards the vehicles transporting industrial and hazardous waste.

B. Requirements towards specific waste streams

During the recent years a set of secondary legislation documents were adopted aiming at the regulation of specific waste streams such as waste oils, batteries and accumulators, sewage sludge used in agriculture, etc. In principle, these requirements supplement or specify more precisely the legal framework by setting out additional requirements and obligations towards the producers of products that generate waste, specialized waste treatment companies and the competent authorities while considering the specificity of the waste stream and the potential risks to the environment.

Waste oils

The ***Regulation on requirements for treatment of waste oils and oil products*** (Promulgated in State Gazette, issue 59/2000) aims at ensuring collection of waste oils and oils products and their further treatment without risk to the human health and the environment, in accordance with the requirements of Directive 75/439/EC on disposal of waste oils.

The Regulation gives priority of the regeneration of waste oils comparing to incineration with energy recovery. The disposal by destruction or controlled storage is considered as last

option.

The Regulation prohibits:

- discharge of waste oils and oil products into the surface and ground waters , in the coastal area and sewage systems;
- storage and/or dumping of waste oils and oil products causing water and soil contamination;
- uncontrolled dumping of the residues generated from treatment of waste oils and oil products;
- treatment, including incineration, if the limit values for emission of harmful substances into the ambient air are exceeded or the relevant requirements are not met.

The municipal mayors are obliged to:

- determine the sites for changing of waste oils on the territory of the municipality in through the municipal waste management programs;
- informing of the public about these sites, including about the repair shops and petrol stations performing waste oils change on the territory of the municipality.

Batteries and accumulators

Directive 91/157/EC on batteries and accumulators, containing certain dangerous substances is adopted as specific measure in connection with the framework Directive 75/442/EC on waste. The requirements of Directive 91/157/EC are transposed in the national legislation by the ***Regulation on requirements towards putting into market of batteries and accumulators and treatment and transportation of waste batteries and accumulators*** (Promulgated in State Gazette, issue 61/2000) where the following conditions are laid down:

- maximal mercury content in alkaline batteries containing manganese dioxide;
- requirements towards incorporation of batteries into consumers goods;
- marking for separate collection, heavy metal content (mercury, cadmium, lead) and recycling;
- collection, treatment and disposal of spent batteries and accumulators;
- product charges;
- planning and information.

It is required that the waste batteries and accumulators must be collected separately and the depositing of this waste in containers for municipal waste as well as their mixing with other types of waste are prohibited.

The sites for placing of containers for separate collection of batteries shall be determined by the municipal councils. The places for selling of batteries and accumulators shall obligatory be used for location of separate collection containers.

The Regulation sets out obligations to the producers and importers of batteries and accumulators to pay product charges to EMEPA (former National Environmental Protection Fund) at the Ministry of Environment and Water, determined following the order of chapter four. The charges are not reimbursable and may be spent for investments and operational costs for promotion of separate collection, treatment and/or disposal of spent batteries in accordance with the Rules for organization of EMEPA (adopted by Council of Ministers Decree No 319 from 29.12.2002)..

The municipal waste management programs shall be adapted into compliance with the requirements of this regulation.

Luminescent lamps

The ***Regulation on requirements for putting on the market of luminescent and other containing mercury lamps, and on the treatment and transportation of spent luminescent and***

other mercury containing lamps (Promulgated in State Gazette, issue 101/2000), requires the luminescent lamps to be separately collected and prohibits their placement into containers for municipal waste .

The manufacturers and importers of luminescent lamps are obliged to mark the lamps put on the market or the packaging with a symbol specifying separate collection. In addition they are obliged to indicate on the packaging, or on the guarantee certificate, the mercury content in lamps and also the rules for healthy and safe labour conditions in cases of collection and transportation of spent lamps.

The regulation obliges the sellers of luminescent lamps to end users to take-back free of charge the spent lamps and to deliver them into the municipal collection sites.

The mayors of municipalities are obliged to ensure the organization or implementations of system for separate collection of spend lamps from persons selling the lamps to end users located on the territory of the municipality. In implementation of these obligations the mayors must also:

- determine the sites for location, to organize and provide equipment for collection points on the territory of municipality, or to provide movable collection facilities and direct delivery of spent lamps to disposal installations;
- organize the separate collection and storage of spend lamps from the persons selling lamps to the end users;
- ensure delivery of the spent lamps for treatment and/or disposal to persons having the relevant permits;
- inform the general public via the mass media and any other available means about the collection sites for spent luminescent lamps, as well as about the dates of the campaigns launched.

The regulation allows the municipalities to:

- organize the collection by themselves or to assign their obligations to specialized companies;
- collect spend lamps from persons, different from the retailers;
- carry out the activities stated above on an individual basis or in cooperation with other municipalities.

The municipal waste management programmes shall comply with the provision of this regulation.

<u>End-of-life vehicles</u>

Directive 2000/53/EC on end-of-life vehicles is transposed by ***Regulation on conditions and procedures for reduction of the pollution caused from waste generated from vehicles*** (Promulgated in State Gazette, issue 98/2001), which sets out the requirements aiming to ensure:

- prevention of waste generation and reduction of the pollution caused by waste from end-of-life vehicles (ELV);
- achievement of high levels of reuse, recycling and other forms of recovery of ELV and components from ELV, aiming at reduction of the waste quantities destined for final disposal;
- improvement of the ecological conditions of the economic operators involved in vehicles' life cycle management, in particular of persons dealing with treatment of ELV;
- establishment of system for separate collection, transportation and treatment of ELV, their components and materials;

- environmentally sound treatment or safe storage of the ELV, their components and materials, as well as their wastes, by fulfilment of the pollution prevention requirements and in the cases of pollution – by reducing or limiting the impacts on the human health and the environment.

The regulation imposes obligations to manufacturers and importers of vehicles and other economic operators, owners of vehicles and municipalities to establish national system for treatment of ELV.

The owners of ELV are obliged to deliver them to the places specified in the regulation, without paying charge and the costs for their transportation and treatment.

The organization of collection of ELV and the temporary storage sites is duty of the mayors of municipalities. The mayors are obliged to:

- determine the sited for location of temporary storage sites and their total number on the territory of municipality;
- organize the collection, transportation and storage at the temporary storage sites; the sites have to be easily accessible and with sufficient area, taking into consideration the total ELV number;
- organize the activities by themselves or delegate these obligations to natural or legal persons registered under the *Trade Act* and having the relevant permits according to the Waste Management Act.

The mayors of municipalities can perform the above mentioned activities by themselves or in cooperation with other municipalities.

The regional bodies of the Ministry of Interior, sector "Traffic Police", on every three months period shall send to the mayors of municipalities list of the ELV.

The mayor of municipality or the operator of the dismantling centre, or persons authorized by them, issue to the owner of ELV a certificate for deregistration of the vehicle under the meaning of Article 18, paragraph 2 of *Regulation № I-45 since 2000 on registration and reporting of motor vehicles and their trailers* (State Gazette issue 31/2000).

For the financial provision of the national system for treatment of ELV, charges are collected and accumulated on account of the EMEPA.

Sludge from wastewater treatment plants

The ***Regulation on requirements for soil prevention when sewage sludge from waste water treatment plants is applied for agricultural purposes*** (Promulgated in State Gazette, issue 101/2000) has the purpose of preventing the harmful impact upon soils, plants, animals and human health caused as a result of utilization of sewage sludge from waste water treatment plants in the agriculture, by regulating the requirements and the rules for its proper usage. The Regulation is in compliance with the Directive 86/278/EC on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture.

Prohibitions are introduced for:

- concentration limit values of heavy metals in soils;
- concentration limit values of heavy metals in sludge destined for use in agricultural;
- concentration limit values of heavy metals, which can be inputted annually into agricultural soils, average for ten years period.

The sludge originating from septic tanks and other similar installations must be delivered for treatment in wastewater treatment plants.

The regulation prohibits also the utilization of non-treated sludge in agriculture and also fixes other limitations for using of sludge into grasslands and agricultural areas on which forage, vegetable and horticultural cultures are grown.

The sludge producers are obliged to perform periodical analyses of the parameters set out in the Regulation, using the approved methods and authorized laboratories. The test results shall be provided to sludge users and the Ministry of agriculture and forestry in order to feed the information register for agricultural and soils resources.

The regulation also sets the requirements for analyses of soils, the test periodicity and obligations for documentation and reporting by the sludge producers and users.

Packaging and packaging waste

According to the WMA the producers and importers of packed goods are obliged to collect separately the waste generated from the consumption of these goods and to achieve the following targets for recycling and recovery:

1. not less then 50 % and not more than 65% of the weight of packaging waste should be recovered;

2. in the frame of the target in point 1, not less than 25% and not more than 45% of the weight of packaging materials, contented in the packaging waste should be recycled, including not less than 15 % from the weight of each packaging material.

These targets should be gradually achieved till 31.12.2010, in accordance with the deadlines set in the transitional and concluding provisions of the WMA.

In the draft of the Regulation on packaging and packaging waste, the following conditions and requirements are set out:

- reduction of the harmful impact of packaging waste upon the environment;
- fulfilment of the essential requirements for packaging put on market;
- reduction of the quantities of the packaging waste destined for final disposal by undertaking of measures for observation of the waste management hierarchy;
- establishment of system for separate collection, recycling and recovery of packaging waste;
- environmentally sound disposal of packaging waste that can not be recycled or recovered.

C. Waste classification

The national waste classification is regulated by Order No RD – 323/1998 Minister of Environment and Water and the Minister of Healthcare (Promulgated in State Gazette, issue 120/1998), according to the "List of wastes" presented as Annex 1. The List of wastes is drawn up in compliance with the European Waste Catalogue (EWC), adopted by Decision 94/3/EC.

The different types of waste are defined with 6-digits code for waste and respectively 4-digit code of sub-chapters and 2-digit code of chapters.

The sign "*" indicates the wastes included in the European Hazardous Waste List (EHWL), according to Decision 94/904/EC. In compliance with Article 2, item 4 of the Directive 91/689/EEC on hazardous waste, with the sign "**" in the list are marked wastes that may display hazardous properties. They are determined by an expert assessment, based on the hazardous waste catalogue in force since 1998 (adopted by Decree of the Council of Ministers 153/1993 on collection, transportation and disposal of hazardous waste).

According to the provisions of the Waste management Act a draft Regulation on waste classification is developed, which will transpose Decision 2000/532/EC and its amendments.

D. Importation, exportation and transit of waste

In accordance with the Waste management Act waste may be imported on the territory of the country only for recovery. The importation of waste in the country is prohibited:

- with a purpose of storage, landfilling or other kind of disposal;
- if the waste is composed form materials, for which the targets set in §9 of WMA and the secondary legislation are not achieved or the waste is used tyres in cases when during the preceding year the operator of the installation has recovered less quantity wastes from Bulgarian origin comparing to the quantity of the waste imported for recovery by the same installation;
- if the waste is prohibited for landfilling in cases when during the preceding year the operator of the installation has recovered less quantity wastes from Bulgarian origin comparing to the quantity of the waste imported for recovery by the same installation.

Waste export is prohibited without written consent of the competent authorities of the state of import and the states of transit if this is required by international agreements in force for Republic of Bulgaria. The type, quantity and waste treatment operation of the imported waste for which permit is not required should be registered by the Ministry of environment and water.

The conditions and procedure for issuance of permits for transfrontier shipment of waste are set out by the ***Regulation on the cases when permit is required for import, export ad transit of waste and the conditions for its issuance*** (Promulgated in State Gazette, issue 66/2000).

E. Information and reporting

The Waste Management Act sets out requirements for minimal quantity of information that should be contained in the documents for reporting and provision of information for waste management activities.

By ***Regulation No.10 on the order for filing in of waste related reporting and waste management activities information (***Promulgated in State Gazette, issue 151/1998) the obligations of persons generating, transporting and/or treating waste and also duties of the municipal administrations are set out in connection with the drawing up of the reporting and information documents, including the periods for accounting and the deadlines for submission and verification of the reports.

The purpose of the regulation is to obtain complete and reliable information on waste management activities through determination of the order for reporting and documentation.

The waste management data are gathered through:

- reporting documents;
- information from owners of establishments and undertakings that generate waste;
- information from owners of waste disposal facilities;
- declaration for the expected hazardous waste generation rates;
- information registers for the permits issued under the WMA, closed sites and operations;
- any other means such as results from site inspections by the competent authorities, monitoring data, customs declarations etc.

The reporting documents under the meaning of this regulation are:

- Waste record books;
- annual reports consisting of:
    - information card-reports for municipal, construction, industrial and hazardous waste;
    - reports for the implementation of the waste management programs ;

- report cards for delivery, transportation and acceptance of hazardous waste.

The formats and the contents of record books and information cards are set out in the Annexes of the Regulation.

ANNEX № 2

INDICATORS FOR ACHIEVEMENT OF THE OBJECTIVES SET BY THE PROGRAM

№	OBJECTIVE	MAIN INDICATORS FOR ACHIEVEMENT Of THE OBJECTIVE
1	***Prevention and minimization of the waste generated***	
	5.3.1.1. Regulation and promotion of the waste prevention	- number of issued IPPC permits in compliance with EPA - number of certificated companies on BDS EN ISO 14 001
	5.3.1.2. Optimal application of economic instruments for promoting the waste prevention	- quantities of the waste generated from different categories (municipal, construction, industrial and hazardous)
	5.3.1.3. Rising of the environmental awareness and consultations with the stakeholders taking part in the waste management process about the waste prevention	- number of organized information campaigns - number of the covered companies and population
	5.3.1.4. Reduction of the hazardous substances content in the waste	- quantities of the hazardous waste generated compared to the whole quantity of generated waste in the country
	5.3.1.5. Reduction of the hazardous waste quantities in the municipal waste flow	- percentage of the covered population by systems for collection of hazardous municipal waste
2	***Increase of the quantity recycled and recovered waste***	
	5.3.2.1. Establishment of requirements for recycling and recovery of waste	- number of adopted legislative documents, standards and methodological guidelines, transposing the EU requirements in this field
	5.3.2.2. Introduction of systems for separate collection with a purpose of recovery and recycling of waste	- number of the introduced systems for separate collection of the different types of waste by regions and the population covered by separate collection systems
	5.3.2.3. Establishment of stable, long term markets for the materials obtained from waste recycling	- quantities of recycled waste compared to the whole quantity of waste generated
	5.3.2.4. Information campaigns for the potential possibilities and benefits of the waste recycling and recovery	- number of organized information campaigns and population covered
	5.3.2.5. Increase of the quantity of the energy recovered during waste incineration	- quantities of waste, incinerated with energy recovery compared to the whole quantity of waste recovered and the whole quantities of the waste generated
3	***Improvement of the organization for separation, temporary storage, collection and transportation of the waste***	
	5.3.3.1. Development and implementation of systems for collection of hazardous waste	- percentage of the population covered by systems for collection of hazardous municipal waste
	5.3.3.2. Development and implementation of modern multifunctional systems for collection and transportation of municipal waste	- percentage of the population covered by the systems for waste collection and transportation on local and national level
4	***Environmentally sound waste disposal***	
	5.3.4.1. Adaptation into compliance with the legal requirements or closure of the existing waste disposal facilities	- number of facilities in operation - number of closed facilities and these which are in closing procedure compared to the number of facilities, which will be closed
	5.3.4.2. Establishment of a system of waste disposal installations and facilities	- number of the constructed regional landfills compared to the number of

№	OBJECTIVE	MAIN INDICATORS FOR ACHIEVEMENT Of THE OBJECTIVE
		landfills which will be constructed - percentage of the landfills that meet the requirements of the legal requirements - number of the constructed facilities for disposal of hazardous and non-hazardous industrial waste and their capacity compared to the quantity of the waste generated and the percentage of the facilities which are in compliance with the legal requirements - number of constructed facilities for disposal of construction waste and their capacity compared to the whole quantity of waste generated
	5.3.4.3. The charges for final disposal should cover the long term costs according to all legal requirements	- changes in the amount of charges for final disposal in the country compared to the expenses for construction, operation and closure of disposal facilities
	5.3.4.4. Financial securities by the operators of facilities for disposal of waste	- number of facilities with financial guarantee, compared to the total number of facilities; quantity of waste disposed in these facilities compared to the total quantity waste disposed
	5.3.4.5. Introduction of pre-treatment of waste before landfilling	- number of facilities for pre-treatment of waste, quantity of pre-treated waste compared to the total quantity of waste landfilled
	5.3.4.6. Development and implementation of National strategy for reduction of the quantities biodegradable waste going to landfills	- quantity of biodegradable waste generated - quantity of biodegradable waste landfilled - quantity of biodegradable waste recovered by different recovery operations - number of constructed composting installations
5	***Elimination and minimization of the risk resulting from the past waste contaminations***	
	5.3.5.1. Elimination of past waste contaminations from landfills and illegal dumpsites	- number of closed illegal dumpsites and past municipal waste contaminations, their area compared to the whole area of all identified illegal dumpsites and past municipal waste contaminations
	5.3.5.2. Minimization of the risk from abandoned or closed industrial sites polluted with hazardous waste	- number and area of the cleaned up polluted sites compared to the number and area of all identified polluted sites
	5.3.5.3. Minimization of the risk to the environment and human health arising form storage of preparations for plant protection whose term of appropriate use is expired	- quantity of the disposed obsolete pesticides, number and capacity of the secured storage places compared to the identified quantities
6	***Legal regulation of the waste management and acceleration of the implementation of the legislation and policy in this field***	
	5.3.6.1. Full compliance of the national waste management legislation with the EU requirements and standards	- number of the adopted legal regulations, standards, guidelines, etc., transposing EU requirements in the Bulgarian legislation
	5.3.6.2. Planning of the waste management at national, regional and local level	- number of the adopted national plans and programs - number of municipalities with amendments in the municipal waste management programs compared to the total number of the municipalities in the country
	5.3.6.3. Effective implementation of the waste management	- number of issued permits, licences and

№	OBJECTIVE	MAIN INDICATORS FOR ACHIEVEMENT Of THE OBJECTIVE
	legislation	registration documents in accordance with the Waste management act - number of issued IPPC permits for enterprises carrying out waste management activities - number of inspections for waste management activities - number of sanctions imposed - number of the waste analysis made by authorized laboratories
7	***Provision of sufficient and reliable data for the waste***	
	5.3.7.1. Development and running of centralized information system for the waste	- percentage of information provided in electronic form - number of inspections for ascertainment of the reliability of the reported data - number of sanctions imposed for non-reliable data
	5.3.7.2. Development and implementation of adequate procedures for reporting to the European Commission for waste management issues	- legal laid down procedures for data collection and reporting compared to the total number of prepared reports - number of reports prepared
8	***Strengthening of the administrative capacity of the institutions responsible for management of the waste in the country***	
	5.3.8.1. Provision of enough and qualified personnel and technical resources for the institutions	- number of issued permits, certificates, registration documents - number of inspections compared to the number of the experts in RIEW engaged with waste management
	5.3.8.2. Strengthening of the capacity of the municipal administrations for establishment of integrated and effective waste management system	- number of inspections and other activities in the field of waste management compared to the number of experts engaged with these activities in the respective municipality
9	***Increase of the investments in the sector and implementation of the principles "producer responsibility" and "polluter pays" in the system for integrated waste management***	
	5.3.9.1. Charging of fees that cover long term costs for waste management	- changes of the average for the country amount of the waste management fees and changes of the amount of the fees in the different municipalities
	5.3.9.2. The incomes from permit issuance to cover the administrative costs for monitoring of the permits	- correlation between the rate of fees for issuance of permits, registration documents and certificates and the expense for periodical control;
	5.3.9.3. Effective implementation of economic instruments	- introduced economic instruments
	5.3.9.4. Improvement of the efficiency of spending of the funds allotted by programs of the European Union, foreign donors and the state	- total amount of investments in waste management field and expenses for different activities (collection, transportation, recovery and disposal) - number of waste management projects realized by funding through EU funds and bilateral projects - amount of the funds spent for these projects compared to the total investments for waste activities - amount of the public expenses for waste

№	OBJECTIVE	MAIN INDICATORS FOR ACHIEVEMENT Of THE OBJECTIVE
		activities
10	***Involvement of the public***	
	5.3.10.2. Development and implementation communication and consultation strategy with all stakeholders	- organized information campaigns - population and companies covered by the information campaigns - published information materials
11	***Management of the specific waste streams in compliance with the EU requirements***	
	5.3.11.1.1. Compliance of batteries and accumulators put on the market with the requirements of Directive 91/157/EC	- number of inspections and imposed sanction
	5.3.11.1.2. Reduction of environment risk related to the collection of lead-acid batteries and accumulators	- quantity of collected and delivered for recycling waste accumulators compared to the total amount of accumulators put on the market
	5.3.11.1.3. Establishment of adequate recycling infrastructure of lead-acid batteries	- permitted installation capacities for recycling of lead-acid batteries compared to the total amount of accumulators put on the market
	5.3.11.1.4. Establishment of collection and recovery/disposal schemes for other batteries and accumulators	- quantity of collected and delivered for recycling waste from non-lead-acid batteries and accumulators compared to the total amount of batteries and accumulators of this type put on the market
	5.3.11.1.5. Improvement efficiency of spending of funds generated through the product charges	- total investments spent for projects for collection, recycling and disposal of spent batteries and accumulators
	5.3.11.1.6. Information about the management of batteries and accumulators, provided to the consumers	- realized information campaigns and population involved
	5.3.11.2.1. Development of national legislation on end-of-life vehicles in compliance with the EU requirements	- adopted legal documents, standards, guidelines, etc., transposing European requirements
	5.3.11.2.2. Sufficient administrative capacity in the competent authorities, responsible for the control of end-of-life vehicles management	- number of newly appointed experts - trainings carried out - guidelines developed - number of inspections and imposed sanction
	5.3.11.2.3. Establishment of a specialized end-of-life vehicles Recovery organization	- number of companies which belong to ELV Recovery organizations - number of vehicles put on the marked from the members of recovery organizations
	5.3.11.2.4. Establishment of the necessary capacity of facilities and installations for collection, storage, dismantling and recovery of end-of-life vehicles	- permitted installation capacities for recycling of ELV compared to the vehicles, materials and components from vehicles put on the market - quantity of collected and delivered for recycling ELV materials and components from ELV compared to the total amount of vehicles put on the market
	5.3.11.2.5.Development of financial scheme for financing collection, dismantling, recycling and recovery of end-of-life vehicles	- investments for infrastructure for collection and recycling of end-of-life vehicles - total amount of funds from product charges
	5.3.11.3.1. Establishment of legal and financial preconditions for implementation of environmentally sound waste oils management system	- adopted legal acts, standards, guidelines, etc., transposing European requirements

№	OBJECTIVE	MAIN INDICATORS FOR ACHIEVEMENT Of THE OBJECTIVE
	5.3.11.3.2. Establishment of the necessary infrastructure for collection, regeneration and recovery of waste oils	- permitted installation capacities for recovery of waste oils compared to the total amount of oils put on the market - quantity of collected and delivered for recovery waste oils compared to the total amount of oils put on the market
	5.3.11.3.4. Establishment and implementation of procedures for enforcement of legislation	- number of permits issued for activities with waste oils - number of inspections - number of imposed sanction
	5.3.11.4.1. Inventory of PCBs/PCTs contaminated equipment. Establishment of the data collection system on PCBs/PCTs containing waste	- number of companies in which inventory of equipment potentially contaminated with PCBs/PCTs is carried out - quantity of the identified PCBs/PCTs
	5.3.11.4.3. Establishment of facilities for treatment and disposal of PCBs/PCTs containing waste	- permitted installation capacities for disposal of PCBs/PCTs containing waste - quantity of the PCBs/PCTs containing waste delivered for disposal abroad - quantity of delivered for disposal waste containing PCBs/PCTs compared to the total amount of PCBs/PCTs identified by the inventory
	5.3.11.4.4. Reduction of risks related to the contamination with PCBs/PCTs, used in materials and equipment which is not included in the inventory	- number of organized campaigns for collection of PCBs/PCTs containing waste, other than PCBs/PCTs subject to the inventory and population covered - quantity of collected and delivered for disposal waste containing PCBs/PCTs
	5.3.11.5.1. Establishment of adequate pre-treatment facilities and practices at the WWTP	- permitted installation capacities for pre-treatment of sludge compared to the total amount of the sludge generated
	5.3.11.5.2. Expansion of the used recovery and disposal options and development of the related infrastructure	- quantity of landfilled sludge compared to the total amount of the sludge generated - quantity of sludge used in agriculture compared to the total amount of sludge generated - quantity of sludge used in land restoration and rehabilitation compared to the total amount of sludge generated
	5.3.11.5.3. Reduction of heavy metals content in sludge	- number of inspections and imposed sanction
	5.3.11.5.4. Improvement of the administrative capacity of the competent authorities, development and implementation procedures for control and enforcement of the legislation	- number of inspections and imposed sanction
	5.3.11.6.1. Prevention of packaging waste generation and reuse of packaging	- introduction of deposit systems and other systems for reuse of packaging
	5.3.11.6.2. Increase quantities of recovered and recycled packaging waste	- quantity of recycled and/or recovered packaging waste compared to the total amount of packaging put on the market
	5.3.11.6.3. Compliance of packaging put on the market with legal requirements	- number of inspections and imposed sanctions
	5.3.11.6.4. Sufficient and reliable data on packaging and packaging waste	- number of inspections for ascertainment of reliability of the reported data - number of sanctions for wrongly reported data
	5.3.11.6.5. Strengthening the administrative capacity	- organized trainings for management of packaging and packaging waste - number of appointed experts

№	OBJECTIVE	MAIN INDICATORS FOR ACHIEVEMENT Of THE OBJECTIVE
		- number of inspections and imposed sanction
	5.3.11.6.6. Involvement of citizens in participation in separate waste collection system and increasing public awareness	- number of organized information campaigns and population covered
	5.3.11.7.1. Establishment of efficient hospital waste treatment system	- permitted installation capacities for health care waste treatment compared to the total amount of health care waste generated
	5.3.11.7. 2. Reduction health risk on patient and hospital staff related to generation, storage and waste treatment	- number of healthcare establishments with organized system for separate collection and storage of waste, number of beds in the establishments compared to the total number of healthcare establishments in the country and the total number of hospital beds